HISTORY INFORMATION FOR THE FOLLOWING MANUAL:

SERVICE MANUAL

BA-6 CHASSIS

MODEL NAME	REMOTE COMMANDER	DESTINATION	CHASSIS NO.
KV-21FA315	RM-Y195	LATIN NORTH	SCC-S73N-A
KV-21FA315	RM-Y195	LATIN SOUTH	SCC-S73P-A
KV-21FA515	RM-Y195	LATIN NORTH	SCC-S73Q-A
KV-21FA515	RM-Y195	LATIN SOUTH	SCC-S73R-A
KV-29FA315	RM-Y195	LATIN NORTH	SCC-S73J-A
KV-29FA315	RM-Y195	LATIN SOUTH	SCC-S73K-A
KV-29FA515	RM-Y195	LATIN NORTH	SCC-S73L-A
KV-29FA515	RM-Y195	LATIN SOUTH	SCC-S73M-A

ORIGINAL MANUAL ISSUE DATE: 5/2005

REVISION DATE	SUBJECT
5/2005	No revisions or updates are applicable at this time.

TRINITRON® COLOR TELEVISION

SONY®

9-965-982-01

Self Diagnosis Supported model

SERVICE MANUAL

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KV-21FA315	RM-Y195	LATIN NORTH	SCC-S73N-A
KV-21FA315	RM-Y195	LATIN SOUTH	SCC-S73P-A
KV-21FA515	RM-Y195	LATIN NORTH	SCC-S73Q-A
KV-21FA515	RM-Y195	LATIN SOUTH	SCC-S73R-A
KV-29FA315	RM-Y195	LATIN NORTH	SCC-S73J-A
KV-29FA315	RM-Y195	LATIN SOUTH	SCC-S73K-A
KV-29FA515	RM-Y195	LATIN NORTH	SCC-S73L-A
KV-29FA515	RM-Y195	LATIN SOUTH	SCC-S73M-A

KV-29FA515

RM-Y195

TRINITRON® COLOR TELEVISION

SONY®

9-965-982-01

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SPECIFICATIONS

	KV-21FA315	KV-21FA515
Power Requirements	120V, 60Hz	120V, 60Hz
(Chile, Perú, Bloivia)	220V, 50/60Hz	220V, 50/60Hz
Number of Inputs/Outputs		
Video [1]	3	3
S Video [2]	1	1
Y,P_B, P_R [3]	1	1
Audio [4]	4	4
RF [5]		
External for Center/Subwoofer	1	1
Audio Panel	1	1
Front Panel Audio	1	1
Right & Left Satelite Speakers		1
Speaker Output (W)	5W x 2	5W x 2
Subwoofer	15W	15W
Center	5W	5W
Satelite Speakers		5W x 2
Power Consumption (W)		
In Use (Max)	155W	180W
(Chile, Perú, Bloivia)	150W	175W
In Standby (Max) [5]	1W	1W
Dimensions with Subwoofer (W x H x D)		
mm	648 x 568.5 x 496.4 mm	648 x 568.5 x 496.4 mm
in	$25\ ^{1/2}$ x $22\ ^{1/2}$ x $19\ ^{1/2}$ in	$25\ ^{1/2}$ x $22\ ^{1/2}$ x $19\ ^{1/2}$ in
Dimensions of Satelite Speakers (W x H x D)		
mm		112 x 478.4 x 87 mm
in		$4\ ^{3/8}$ x $18\ ^{3/4}$ x $3\ ^{1/2}$ in
Mass		
kg	28.2 kg	28.2 kg
lbs	62 lbs 1 oz	62 lbs 1 oz
Mass of Satelite Speakers		
kg		.6 kg
lbs		1 lbs 5 oz

1) 1 Vp-p 75 ohms unbalanced, sync negative
2) Y: 1 Vp-p 75 ohms unbalanced, sync negative
   C: 0.286 Vp-p (Burst signal), 75 ohms
3) Y: 1.0 Vp-p, 75 ohms, sync negative; PB: 0.7 Vp-p, 75 ohms;
   PR Vp-p, 75 ohms.
4) 500 mVrms (100% modulation), Impedance: 47 kilohms
5) This specification is the maximum wattage.

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Design and specifications are subject to change without notice.

	KV-29FA315	KV-29FA515
Power Requirements	120V, 60Hz	120V-220V, 50/60Hz
(Chile, Perú, Bloivia)	220V, 50/60Hz	220V, 50/60Hz
Number of Inputs/Outputs		
Video [1]	3	3
S Video [2]	1	1
Y,P_B, P_R [3]	1	1
Audio [4]	4	4
RF [5]	1	1
External for Center/Subwoofer	1	1
Audio Panel	1	1
Front Panel Audio		
Right & Left Satelite Speakers		1
Speaker Output (W)	7W x 2	7W x 2
Subwoofer	20W	20W
Center	7W	7W
Satelite Speakers		7W x 2
Power Consumption (W)		
In Use (Max)	220W	240W
(Chile, Perú, Bloivia)	215W	235W
In Standby (Max) [5]	1W	1W
Dimensions with Subwoofer (W x H x D)		
mm	804 x 697 x 509 mm	804 x 697 x 509 mm
in	31 5/8 x 27 1/2 x 20 in	31 5/8 x 27 1/2 x 20 in
Dimensions of Satelite Speakers (W x H x D)		
mm		112 x 605 x 87 mm
in		4 3/8 x 23 3/4 x 3 1/2 in
Mass		
kg	49.8 kg	49.8 kg
lbs	109 lbs 10 oz	109 lbs 10 oz
Mass of Satelite Speakers		
kg		.8 kg
lbs		1 lbs 12 oz

1) 1 Vp-p 75 ohms unbalanced, sync negative
2) Y: 1 Vp-p 75 ohms unbalanced, sync negative
   C: 0.286 Vp-p (Burst signal), 75 ohms
3) Y: 1.0 Vp-p, 75 ohms, sync negative; PB: 0.7 Vp-p, 75 ohms;
   PR Vp-p, 75 ohms.
4) 500 mVrms (100% modulation), Impedance: 47 kilohms
5) This specification is the maximum wattage.

Television system
American TV standard, NTSC

Channel coverage
VHF: 2-13/ UHF: 14-69/ CATV: 1-125

Antenna
75-ohm external antenna terminal for VHF/UHF

Picture tube
FD Trinitron® tube

Visible screen size
20-inch picture measured diagonally (KV-21FA315/21FA515 Only)
27-inch picture measured diagonally (KV-29FA315/29FA515 Only)

Actual screen size
21-inch measured diagonally (KV-21FA315/21FA515 Only)
29-inch measured diagonally (KV-29FA315/29FA515 Only)

Supplied Accessories
Remote Commander RM-Y195
Two Size AA (R6) Batteries
Telescopic Antenna (KV-21FA315/21FA515 Only)

Optional Accessories
Connection Cables
VMC-810S/820S
VMC-720M
YC-YC-15V/30V
RK74FA

WARNINGS AND CAUTIONS

CAUTION

Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield, or carbon painted on the CRT, after removing the anode.

WARNING!!

An isolation transformer should be used during any service to avoid possible shock hazard, because of live chassis. The chassis of this receiver is directly connected to the AC power line.

⚠ SAFETY-RELATED COMPONENT WARNING!!

Components identified by shading and ⚠ mark on the schematic diagrams, exploded views, and in the parts list are critical for safe operation. Replace these components with Sony parts whose part numbers appear as shown in this manual or in supplements published by Sony. Circuit adjustments that are critical for safe operation are identified in this manual. Follow these procedures whenever critical components are replaced or improper operation is suspected.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly soldered connections. Check the entire board surface for solder splashes and bridges.

2. Check the interboard wiring to ensure that no wires are “pinched” or touching high-wattage resistors.

3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.

4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.

5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.

6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.

7. Check the B+ and HV to see if they are specified values. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.

8. Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

Leakage Test

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instructions.

2. A battery-operated AC milliampmeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75 V, so analog meters must have an accurate low voltage scale. The Simpson’s 250 and Sanwa SH-63TRD are examples of passive VOMs that are suitable. Nearly all battery-operated digital multimeters that have a 2 VAC range are suitable (see Figure A).

How to Find a Good Earth Ground

A cold-water pipe is a guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms.

If a cold-water pipe is not accessible, connect a 60- to 100-watt trouble- light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side on the line; the lamp should light at normal brilliance if the screw is at ground potential (see Figure B).

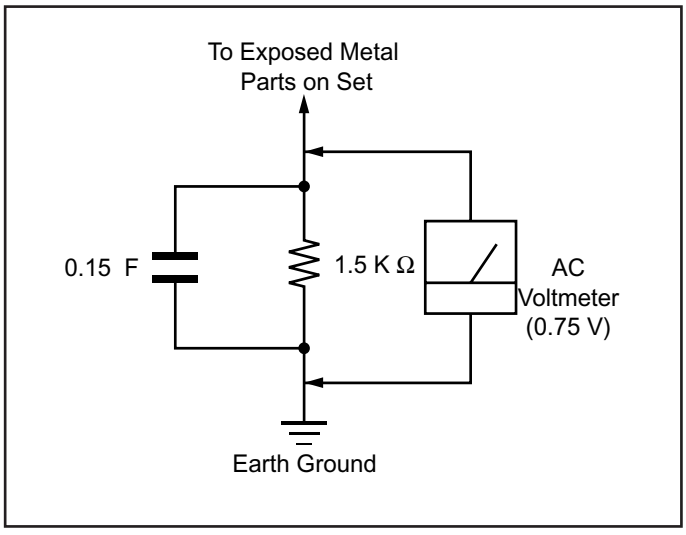


Figure A. Using an AC voltmeter to check AC leakage.

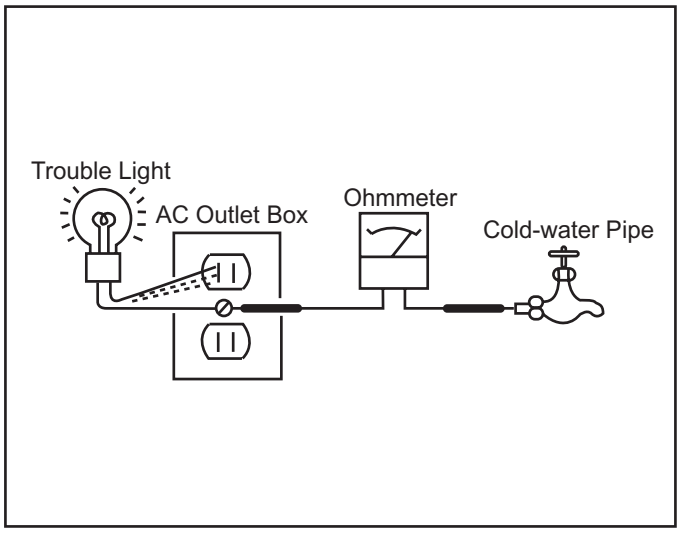


Figure B. Checking for earth ground.

SELF-DIAGNOSTIC FUNCTION

Self Diagnosis Supported model

The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY/TIMER LED will automatically begin to flash. The number of times the LED flashes translates to a probable source of the problem. A definition of the STANDBY/TIMER LED flash indicators is listed in the instruction manual for the user's knowledge and reference. If an error symptom cannot be reproduced, the Remote Commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

Diagnostic Test Indicators

When an error occurs, the STANDBY/TIMER LED will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the LED will identify the first of the problem areas.

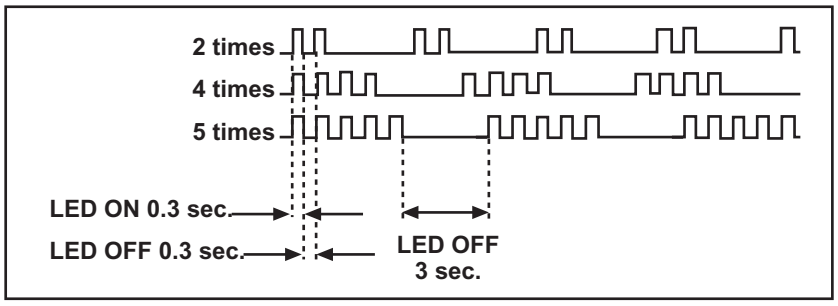
Results for all of the following diagnostic items are displayed on screen. No error has occurred if the screen displays a "0".

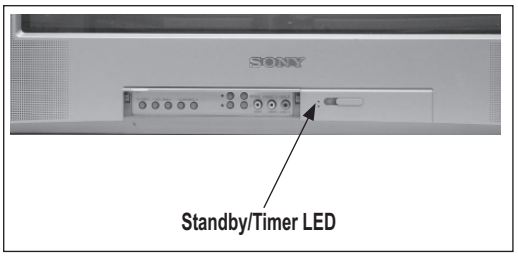
Diagnostic Item Description	No. of times STANDBY/ TIMER lamp flashes	Self-Diagnositc Display/ Diagnostic Result	Probable Cause Location	Detected Symptoms
Power does not turn on	Does not light	————	• Power cord is not plugged in. • Fuse is burned out (F601). (A Board)	• Power does not come on. • No power is supplied to the TV. • AC Power supply is faulty.
+B overcurrent (OCP)*	2 times	2:0 or 2:1	• H.OUT (Q502) is shorted. (A Board) • IC702 is shorted. (CV Board 21" models, C Board 29" models)	• Power does not come on. • Load on power line is shorted.
I-Prot	4 times	4:0 or 4:1	• +13V is not supplied. (A Board) • IC561 is faulty. (A Board)	• Has entered standby state after horizontal raster. • Vertical deflection pulse is stopped. • Power line is shorted or power supply is stopped.
IK (AKB)	5 times	5:0 or 5:1	• IC001 is faulty. (MT Board) • Screen (G2) is improperly adjusted.**	• No raster is generated. • CRT Cathode current detection reference pulse output is small.

*If a +B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously. The symptom that is diagnosed first by the mircrocontroller is displayed on the screen.

**Refer to Screen (G2) Adjustments in Section 2-4. of this manual.

Display of Standby/Timer LED Flash Count





Diagnostic Item	Flash Count*
+B Overcurrent	2 times
I-Prot	4 times
IK (AKB)	5 times

*One flash count is not used for self-diagnostic.

Stopping the Standby/Timer LED Flash

Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY/TIMER LAMP from flashing.

Self-Diagnostic Screen Display

For errors with symptoms such as “power sometimes shuts off” or “screen sometimes goes out” that cannot be confirmed, it is possible to bring up past occurrences of failure on the screen for confirmation.

To Bring Up Screen Test

In standby mode, press buttons on the Remote Commander sequentially, in rapid succession, as shown below:

DISPLAY → Channel 5 → Sound Volume − → POWER

↑ Note that this differs from entering the Service Mode (Sound Volume +).

Self-Diagnostic Screen Display

SELF DIAGNOSTIC		
2:	+B OCP	0
3:	+B OVP	N/A
4:	VSTOP	0
5:	AKB	1
101:	WDT	N/A

Numeral “0” means that no fault was detected.

Numeral “1” means a fault was detected one time only.

Handling of Self-Diagnostic Screen Display

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to “0”.

Unless the result display is cleared to “0”, the self-diagnostic function will not be able to detect subsequent faults after completion of the repairs.

Clearing the Result Display

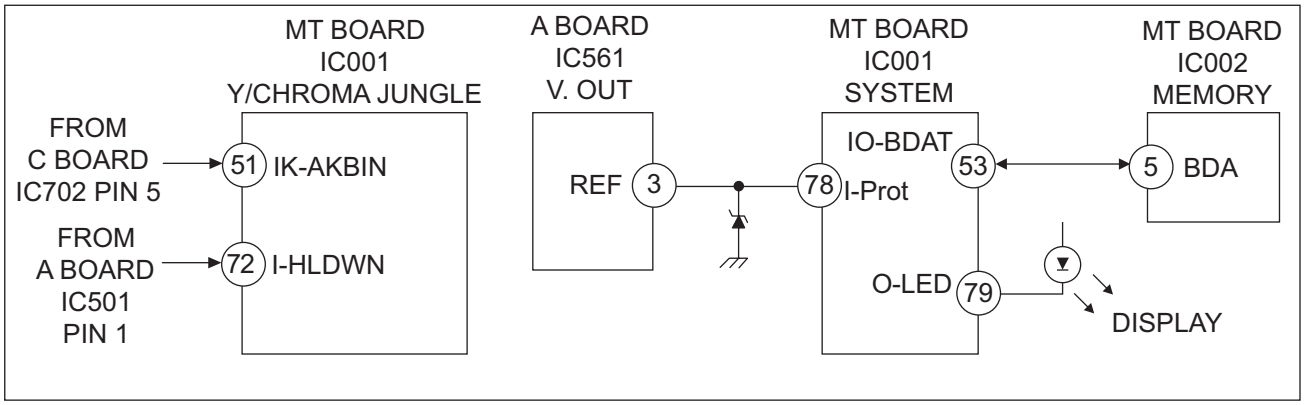
To clear the result display to “0”, press buttons on the Remote Commander sequentially when the diagnostic screen is displayed, as shown below:

Channel 8 → ENTER

Quitting the Self-Diagnostic Screen

To quit the entire self-diagnostic screen, turn off the power switch on the Remote Commander or the main unit.

Self-Diagnostic Circuit



+B overcurrent (OCP)

Occurs when an overcurrent on the +B (135V) line is detected by pin 72 of IC001 (M Board). If the voltage of pin 72 of IC001 (M Board) is less than 1V when V.SYNC is more than seven verticals in a period, the unit will automatically turn off.

I-Prot

Occurs when an absence of the vertical deflection pulse is detected by pin 78 of IC001 (M Board). Power supply will shut down when waveform interval exceeds 2 seconds.

IK (AKB)

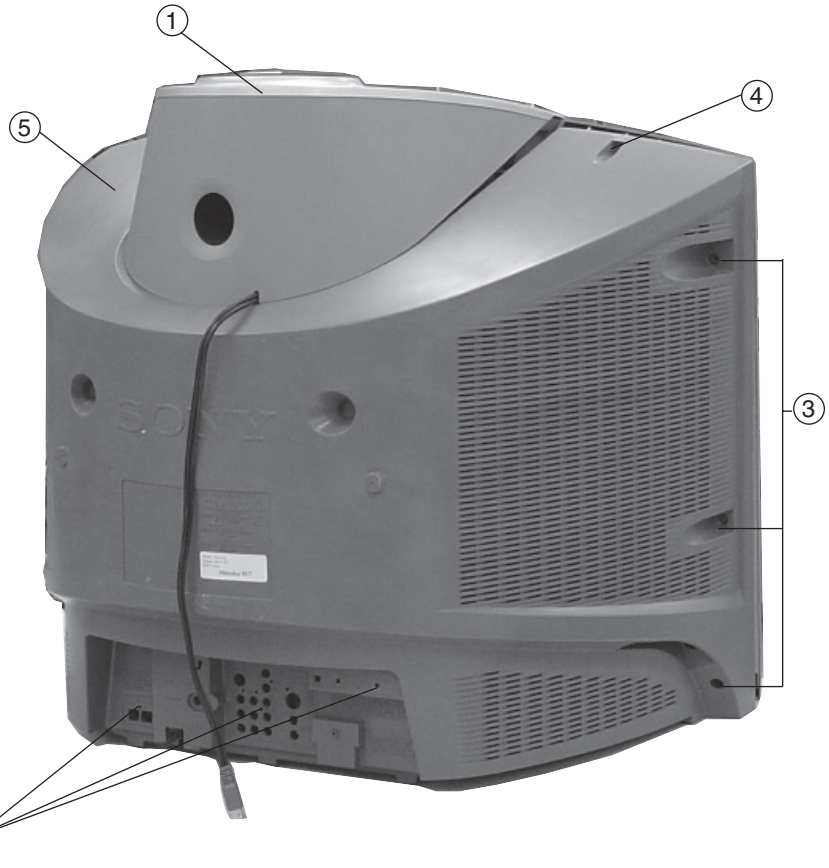
If the RGB levels* do not balance within 2 seconds after the power is turned on, this error will be detected by IC001 (M Board). TV will stay on, but there will be no picture.

*(Refers to the RGB levels of the AKB detection Ref pulse that detects IK).

SECTION 1: DISASSEMBLY

1-1. REAR COVER REMOVAL

(KV-29FA515 PICTURED)



(1) Lift to remove Subwoofer from top of Rear Cover.

(2) Remove screws from back of cover.
5 Screws SCREW +BVTP 3X12 TYPE2 TT (B)
1 Screw +BVTP 4X16 TYPE2 IT-3

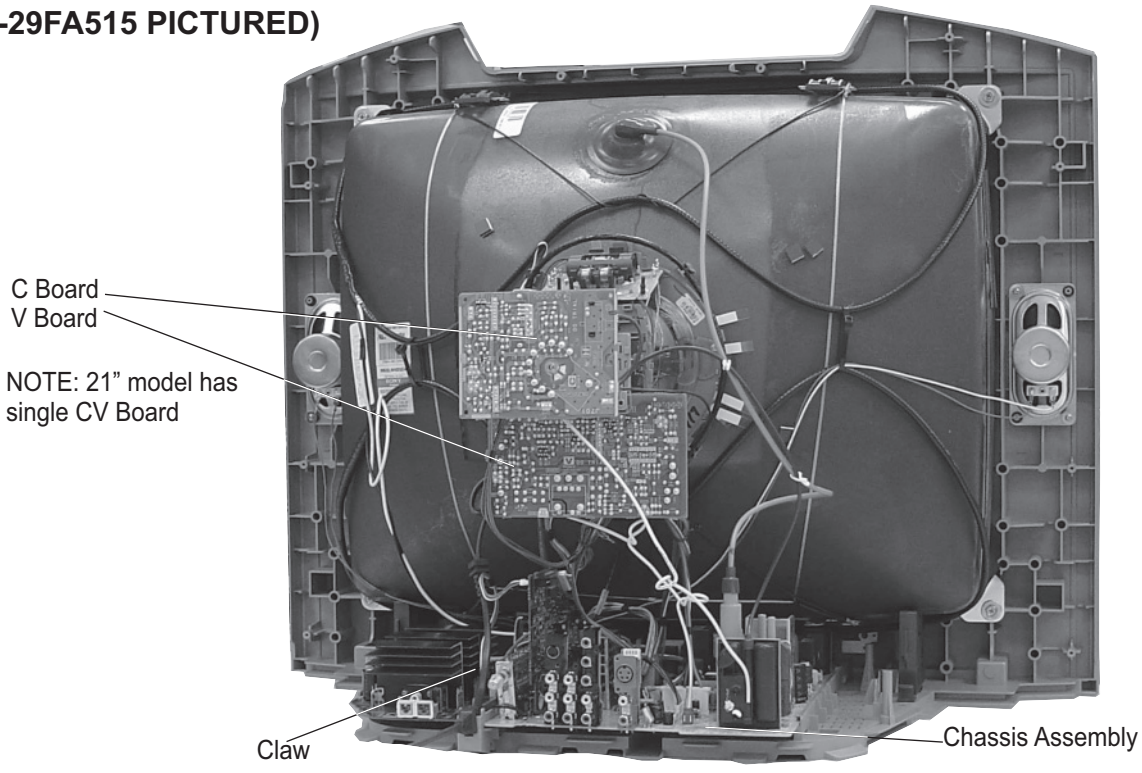
(3) Remove screws from sides of cover.
3 SCREW +BVTP 4X16 TYPE2 IT-3 each side
(KV-29FA315/29FA515 Only)
2 SCREW +BVTP 4X16 TYPE2 IT-3 each side
(KV-21FA315/21FA515 Only)

(4) Remove screws from top of cover.
4 SCREW +BVTP 4X16 TYPE2 IT-3
(KV-29FA315/29FA515 Only)
2 SCREW +BVTP 4X16 TYPE2 IT-3
(KV-21FA315/21FA515 Only)

(5) Remove rear cover

1-2. CHASSIS ASSEMBLY REMOVAL

(KV-29FA515 PICTURED)



1-3. SERVICE POSITION

(KV-21FA515 SHOWN)

① Disconnect the CN501 cable from the A Board.

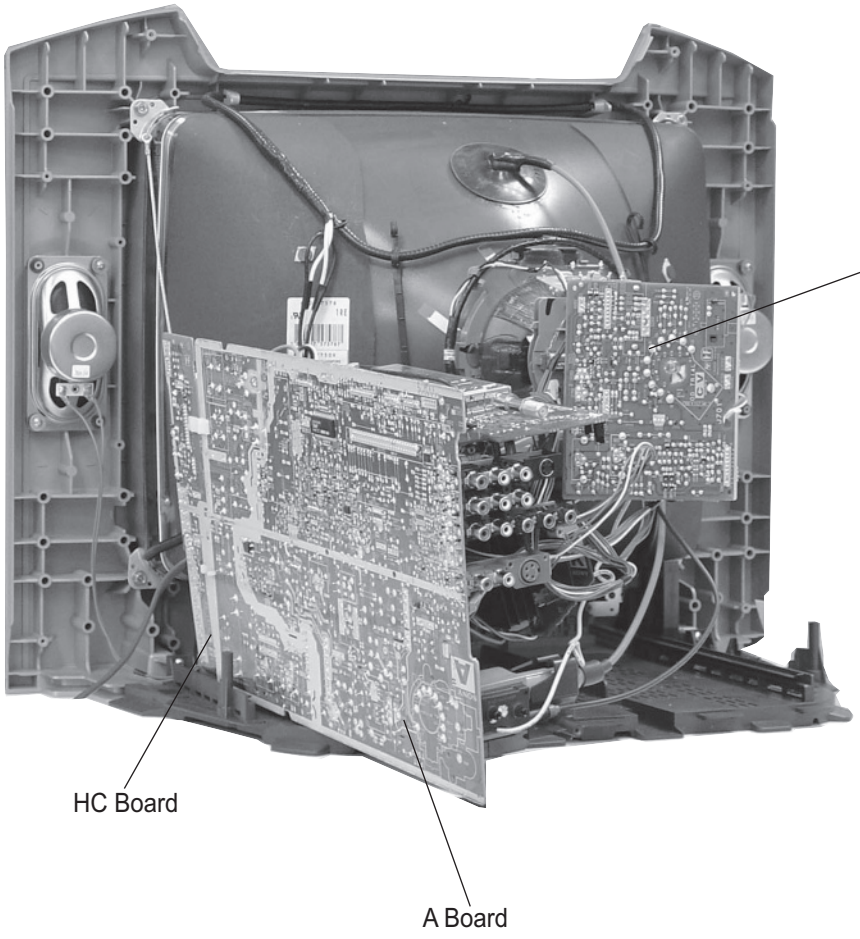
② Press on catch tab to release A Board.

③ Gently pull the K Board and the A Board forward to access the HC Board.

④ Disconnect the speaker cable from the HC Board.

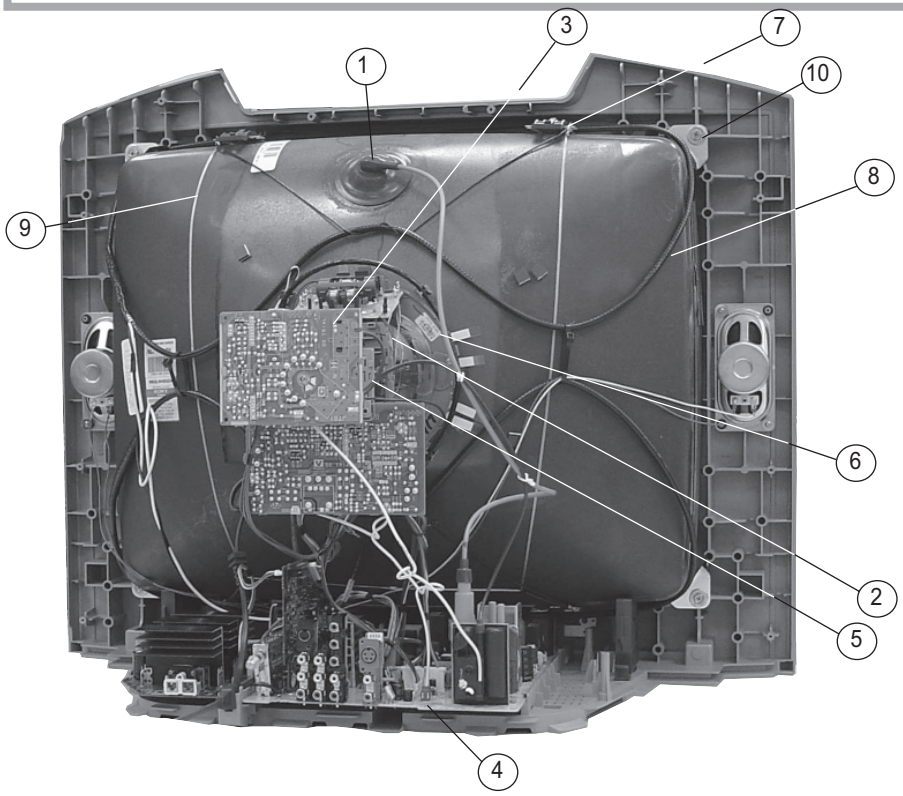
⑤ Gently continuing pulling the A Board and HC Board forward to place in service position.

⑥ Reconnect CN501 and speaker cables



1-4. PICTURE TUBE REMOVAL

WARNING: BEFORE REMOVING THE ANODE CAP
High voltage remains in the CRT even after the power is disconnected. To avoid electric shock, discharge CRT before attempting to remove the anode cap. Short between anode and CRT coated earth ground strap.

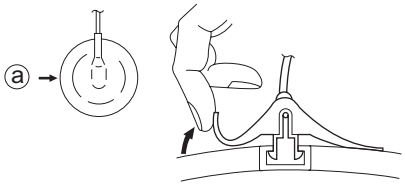


1. Discharge the anode of the CRT and remove the anode cap.
2. Unplug all interconnecting leads from the deflection yoke, neck assembly, degaussing coils and CRT grounding strap.
3. Remove the C Board (KV-29FA315/29FA515) or CV Board (KV-21FA315/21FA515) from the CRT.
4. Remove the chassis assembly.
5. Loosen the neck assembly fixing screw and remove.
6. Loosen the deflection yoke fixing screw and remove.
7. Place the set with the CRT face down on a cushion and remove the degaussing coil holders.
8. Remove the degaussing coils.
9. Remove the CRT grounding strap and spring tension devices.
10. Unscrew the four CRT fixing screws [located on each CRT corner] and remove the CRT [Take care not to handle the CRT by the neck].

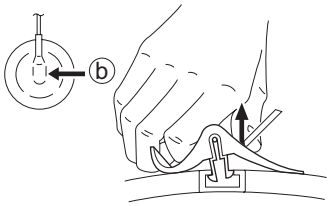
ANODE CAP REMOVAL PROCEDURE

WARNING: High voltage remains in the CRT even after the power is disconnected. To avoid electric shock, discharge CRT **before** attempting to remove the anode cap. Short between anode and coated earth ground strap of CRT.
NOTE: After removing the anode cap, short circuit the anode of the picture tube and the anode cap to either the metal chassis, CRT shield, or carbon painted on the CRT.

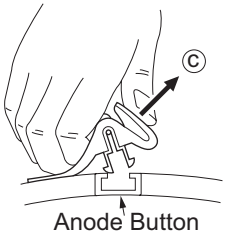
REMOVAL PROCEDURES



Turn up one side of the rubber cap in the direction indicated by arrow ⓐ .



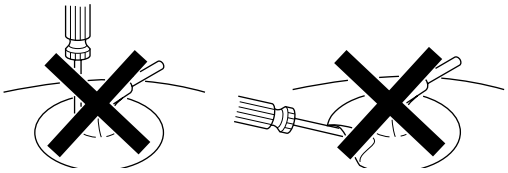
Use your thumb to pull the rubber cap firmly in the direction indicated by arrow ⓑ .



When one side of the rubber cap separates from the anode button, the anode cap can be removed by turning the rubber cap and pulling it in the direction of arrow ⓒ .

HOW TO HANDLE AN ANODE CAP

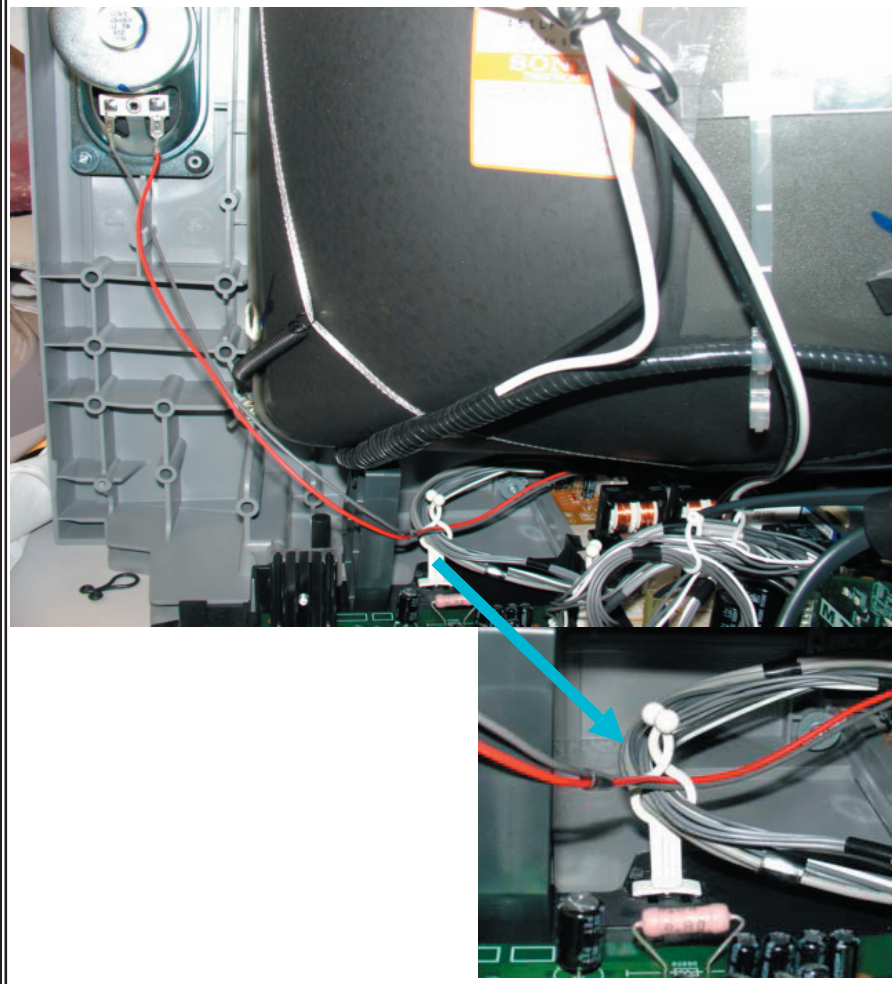
1. Do not use sharp objects which may cause damage to the surface of the anode cap.
2. To avoid damaging the anode cap, do not squeeze the rubber covering too hard. A material fitting called a shatter-hook terminal is built into the rubber.
3. Do not force turn the foot of the rubber cover. This may cause the shatter-hook terminal to protrude and damage the rubber.



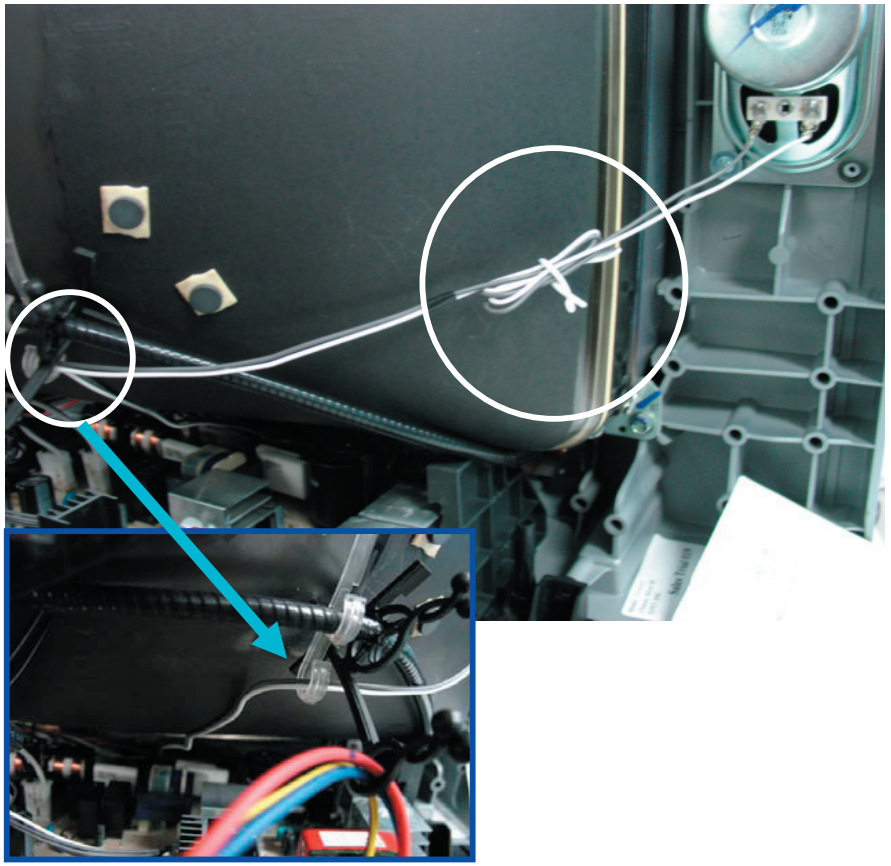
CABLE WIRE DRESSING

KV-21FA315/21FA515 MODELS ONLY

21FA515,21FA315,21FA515C,21FA315C



Dress right speaker wire using a purse lock (4-072-499-11) as picture shown.



Dress left speaker wire through DGC band hook and using a 5mm purse lock (3-703-981-02) as shown in picture.

REV. 1.1

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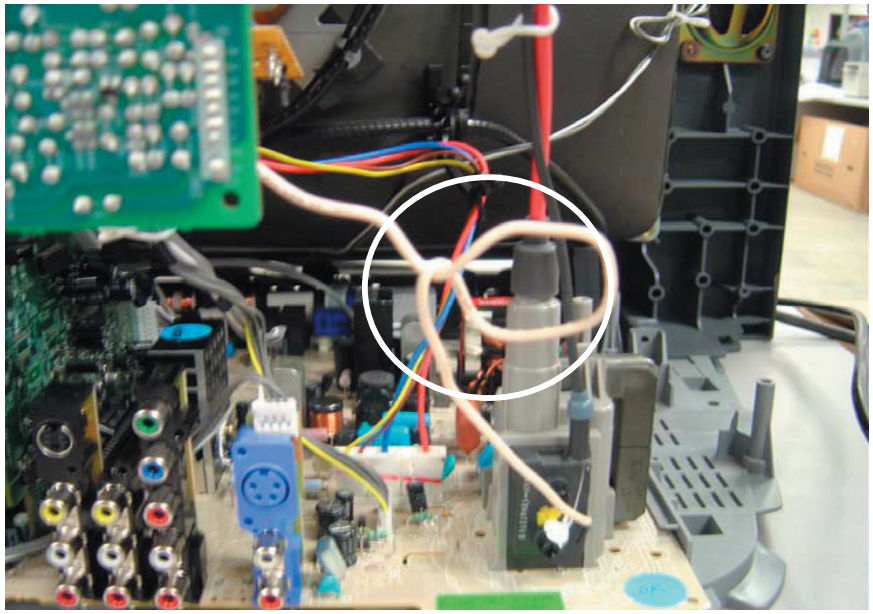
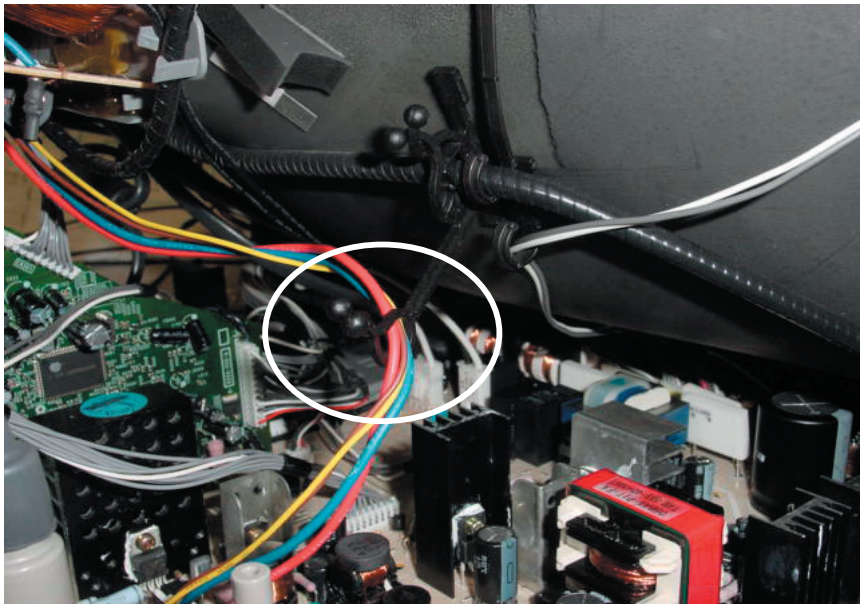
KV-21FA315/21FA515 MODELS ONLY

21FA515,21FA315,21FA515C,21FA315C



Twist G2 wire without stressing it



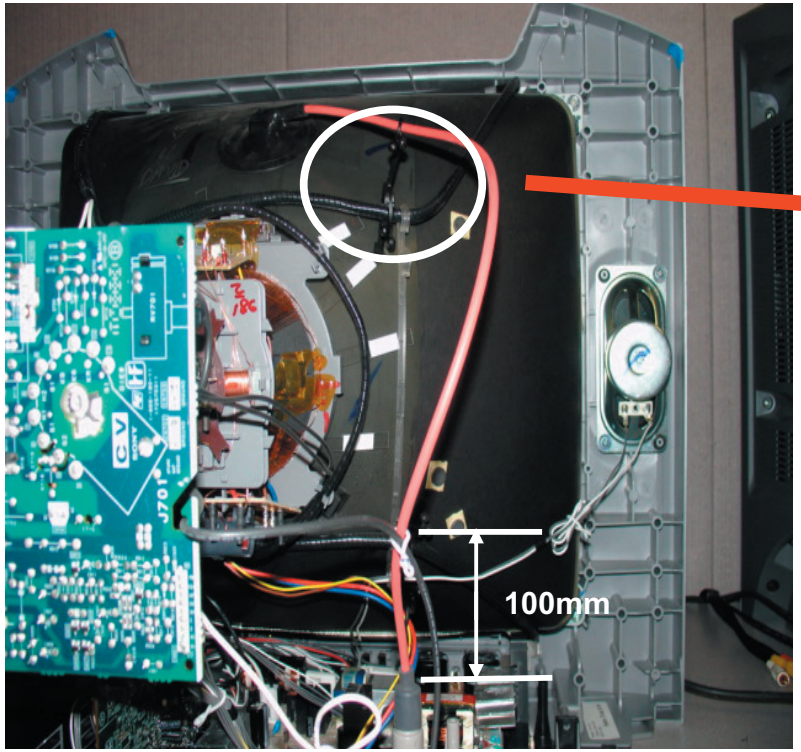
Dress DY's lead wire harness using a purse lock (4-081-411-02) as picture shown. Keep DY's lead wire away from others harnesses

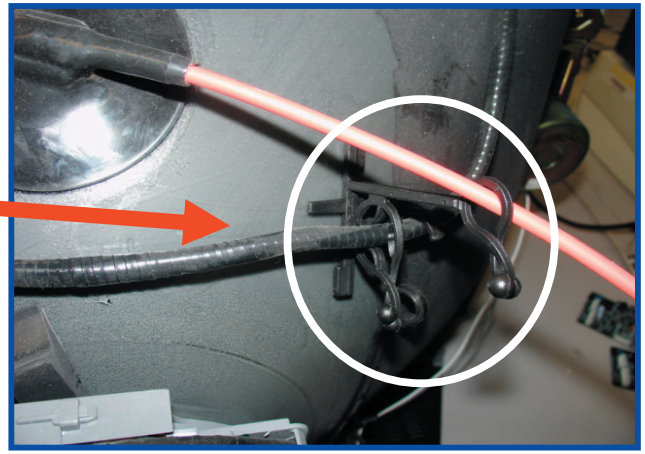
REV. 1.1

3/10

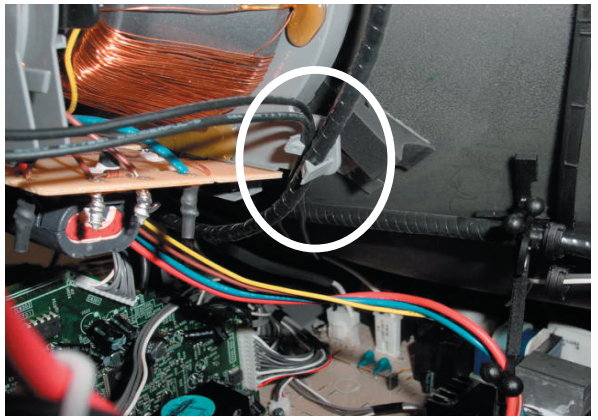
KV-21FA315/21FA515 MODELS ONLY

21FA515,21FA315,21FA515C,21FA315C





- Dress focus lead and HV cable together using 5mm purse lock (3-703-981-02), install purse lock 100mm from HV cable's cap. And pass focus lead through CV board's hook
- Fix Anodo Cap to DGC using a purse lock (4-081-411-02) as shown in picture.



Dress CRT ground wire through DY's cilp together with rotation coil.

REV. 1.1

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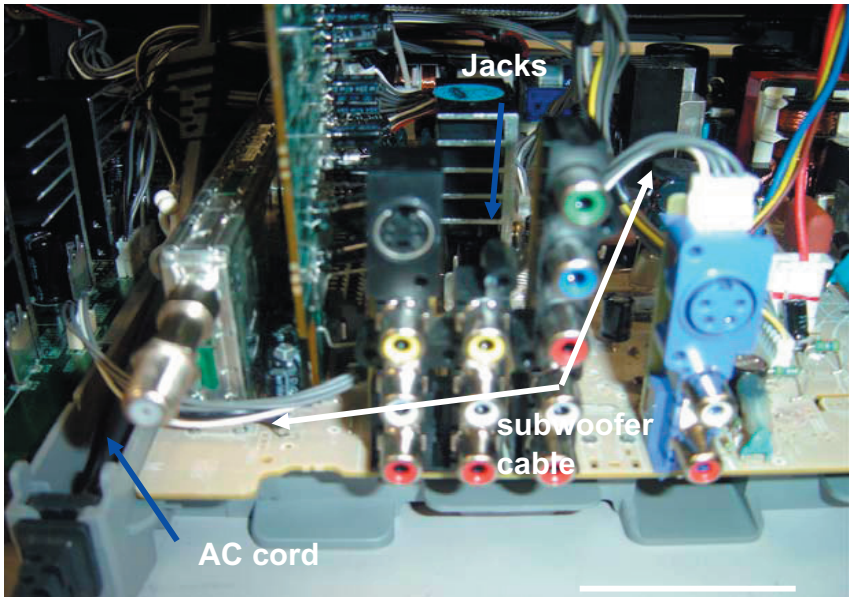
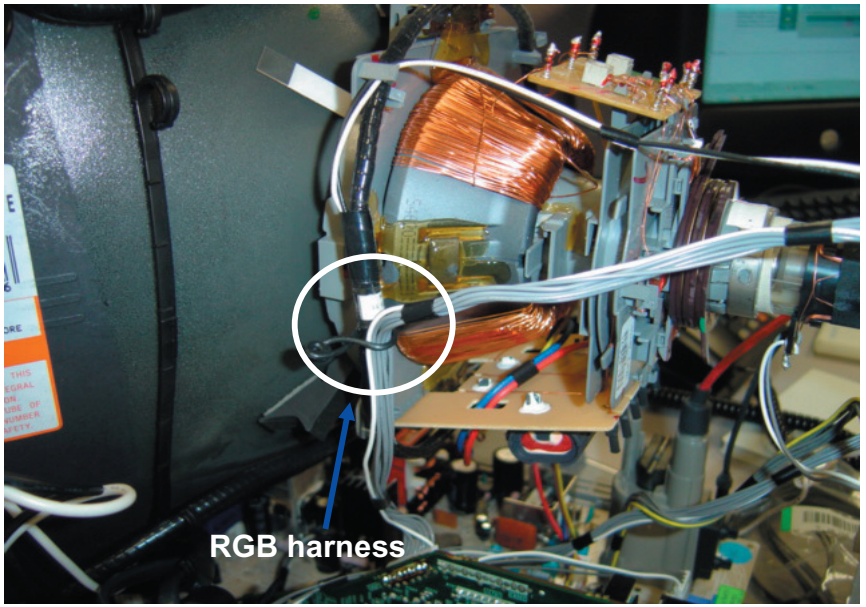
KV-21FA315/21FA515 MODELS ONLY

21FA515,21FA315,21FA515C,21FA315C



Dress subwoofer harness (K/CN2403~A/J207) pass under F-Pin, behind video jacks & over AC cord as picture shown.



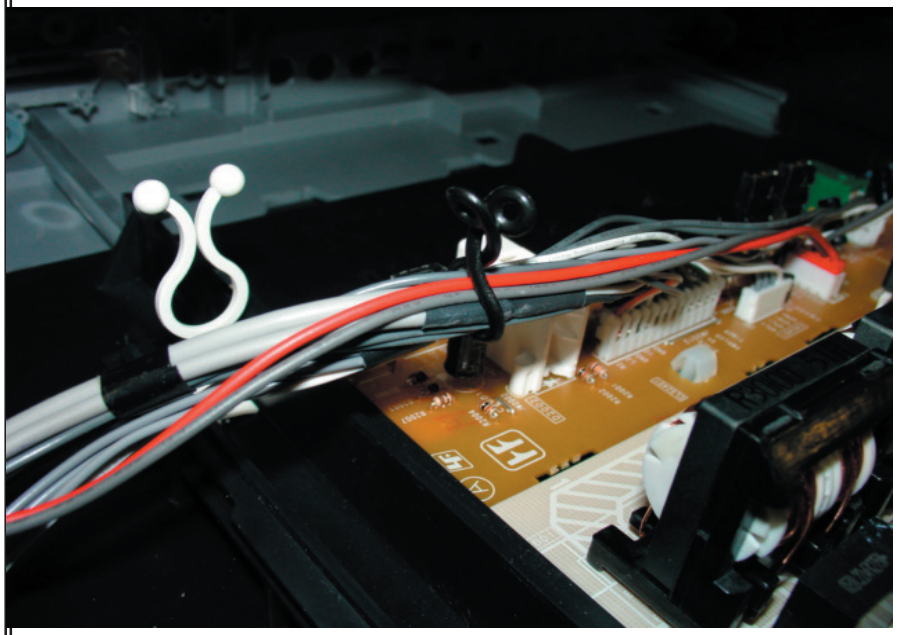
Fix RGB harness (MT/CN301~CV/CN705) to rotation coil using a 9mm purse lock (3-703-982-02) as picture shown.

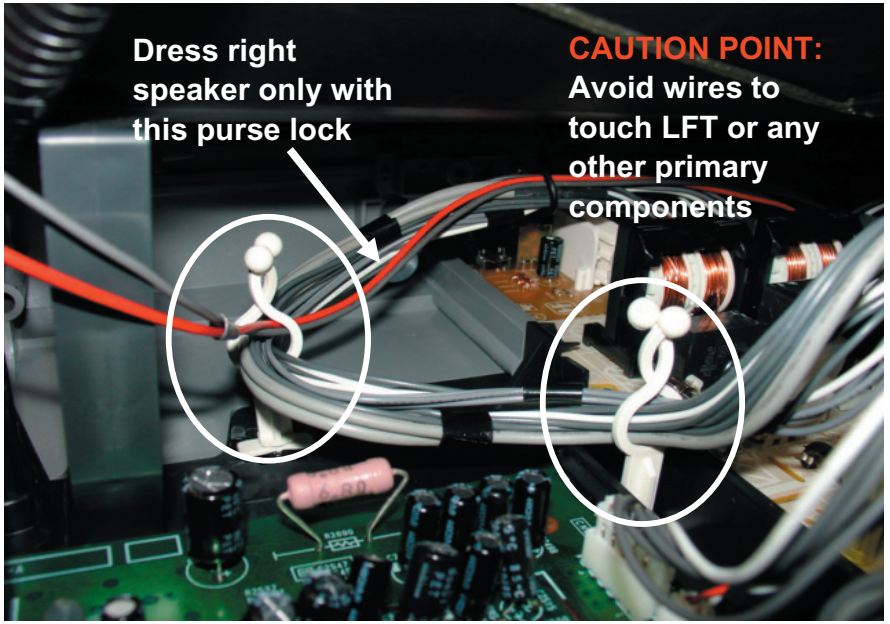
REV. 1.1

5/10

KV-21FA315/21FA515 MODELS ONLY

21FA515,21FA315,21FA515C,21FA315C





Dress 3P (HC/CN2403~K/CN2405), 4P (HC/CN2401~K/CN2400), 12P harness (HC/CN2005~MT/CN303) & Right speaker using a purse lock (3-703-982-02) as shown in picture.

- Dress 3P (HC/CN2403~K/CN2405), 4P (HC/CN2401~K/CN2400), 12P harness (HC/CN2005~MT/CN303) & Right speaker using two purse lock (4-072-499-11) to avoid primary circuit.

REV. 1.1

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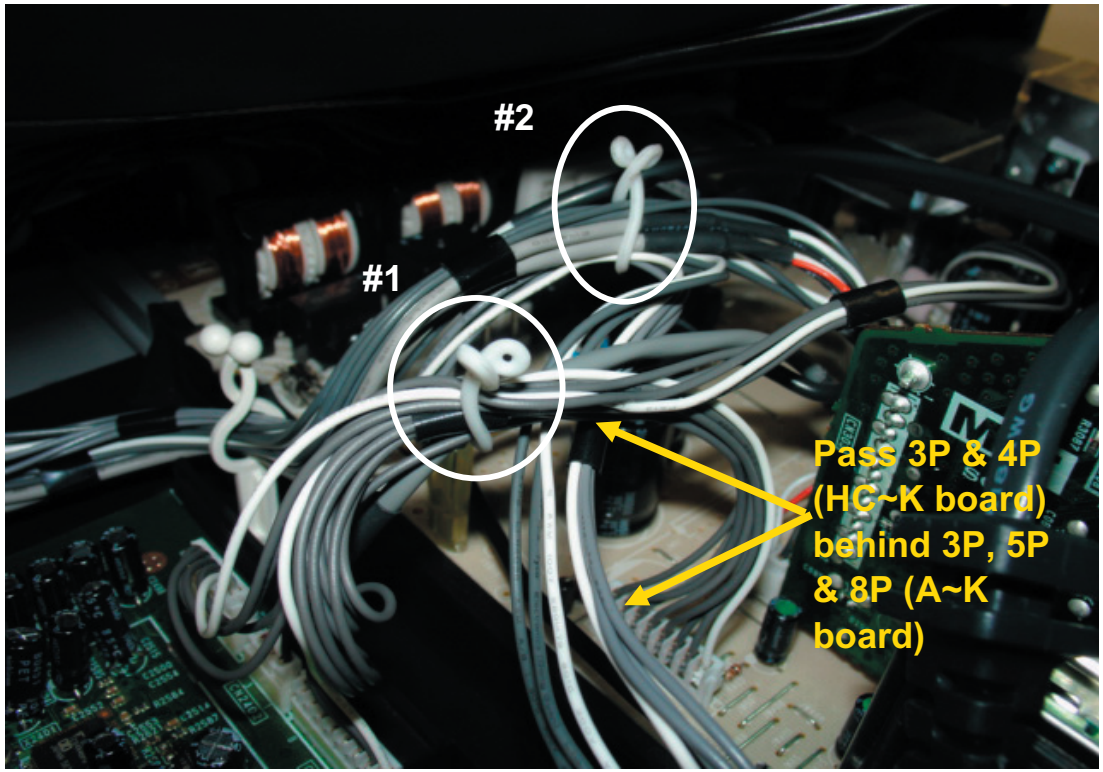
KV-21FA315/21FA515 MODELS ONLY

21FA515,21FA315,21FA515C,21FA315C



- [#1] Dress 3P (A/CN412~K/CN2402), 5P (A/CN201~K/CN2600) and 8P (A/CN411~K/CN2401) audio harnesses using a 5mm purse lock (3-703-981-02)

- [#2] Dress 3P (HC/CN2403~K/CN2405), 4P (HC/CN2401~K/CN2400), 12P harness (HC/CN2005~MT/CN303) using a 5mm purse lock (3-703-981-02) as shown in picture.

REV. 1.1

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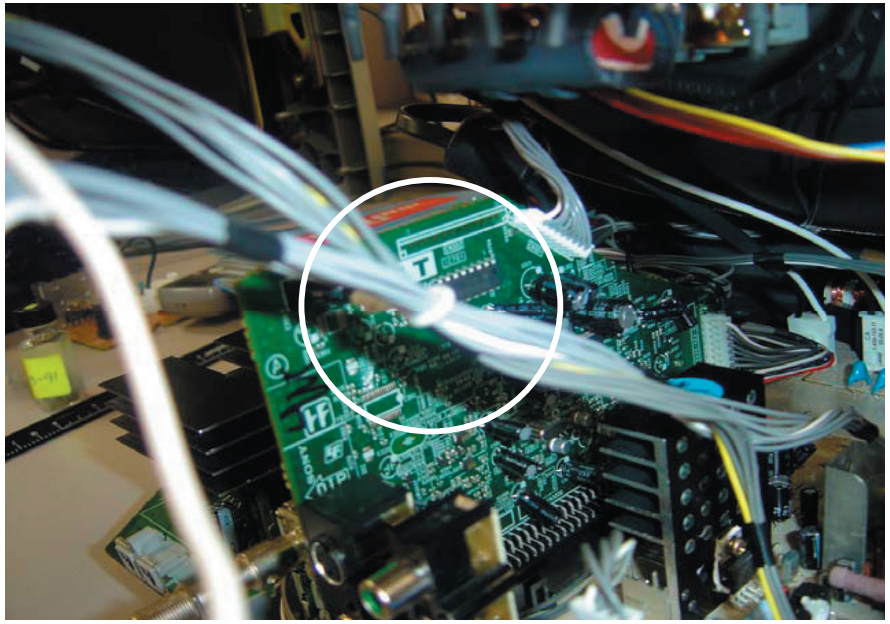
KV-21FA315/21FA515 MODELS ONLY

21FA515,21FA315,21FA515C,21FA315C



Dress VM (A/CN502~CV/CN901) and heater (A/CN503~CV/CN706) harnesses together using a 5mm purse lock (3-703-981-02) as picture shown.

REV. 1.1

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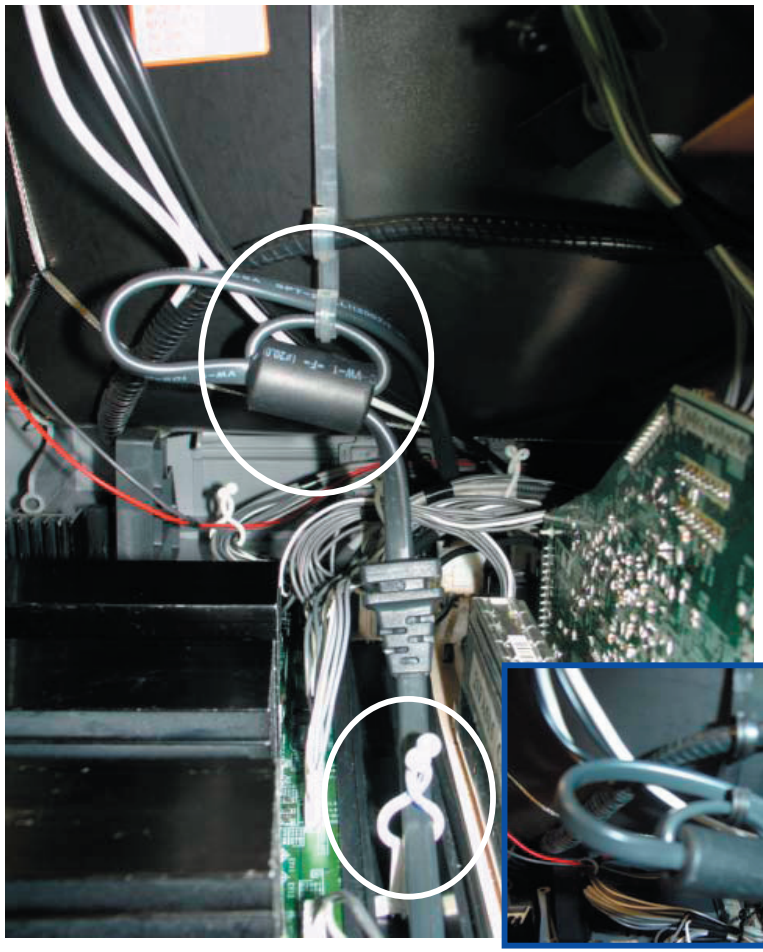
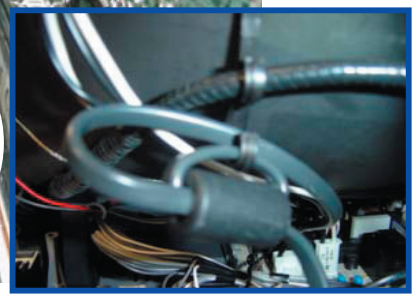
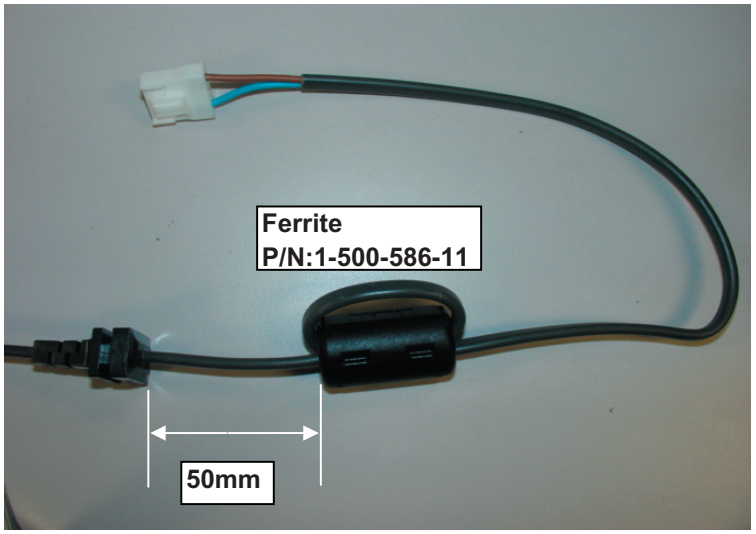
KV-21FA315/21FA515 MODELS ONLY

21FA515,21FA315,21FA515C,21FA315C





ONLY FOR CHILE MODELS



Dress AC-Cord wire through DGC band lower hook and using a purse lock (4-072-499-11) as shown in picuture.

REV. 1.1

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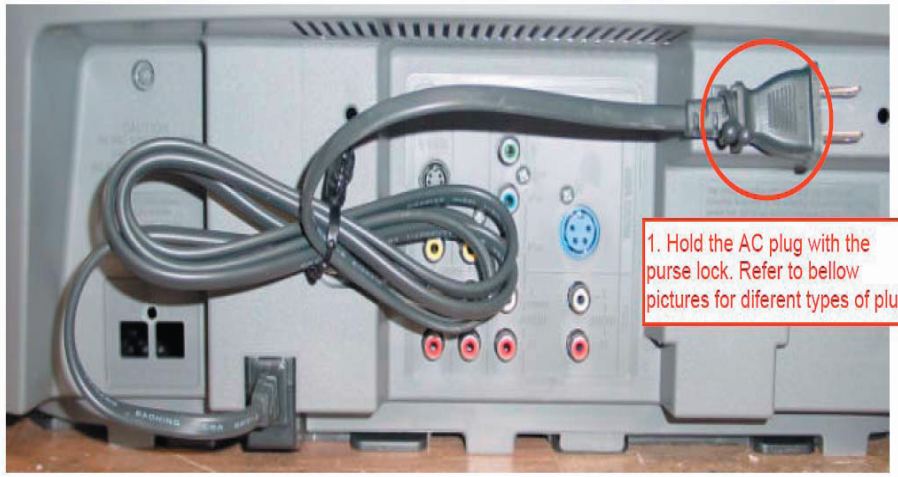
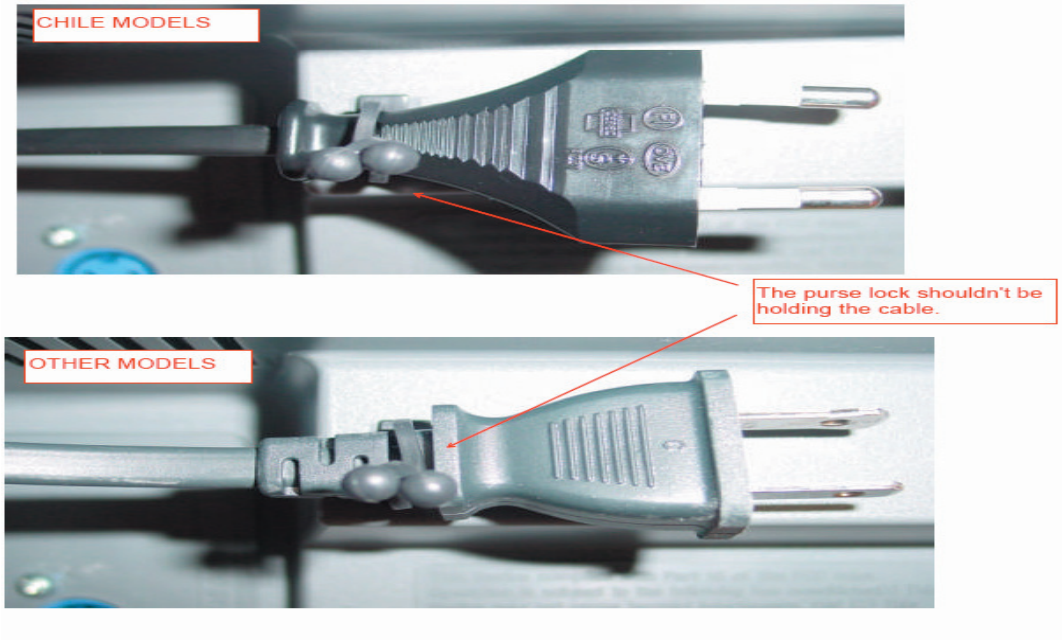
KV-21FA315/21FA515 MODELS ONLY

21FA515,21FA315,21FA515C,21FA315C





REV. 1.1

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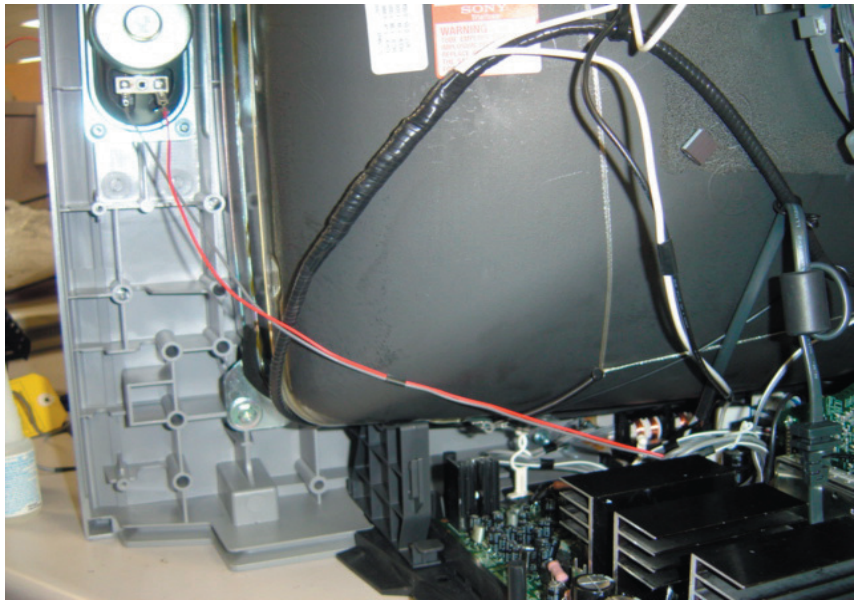
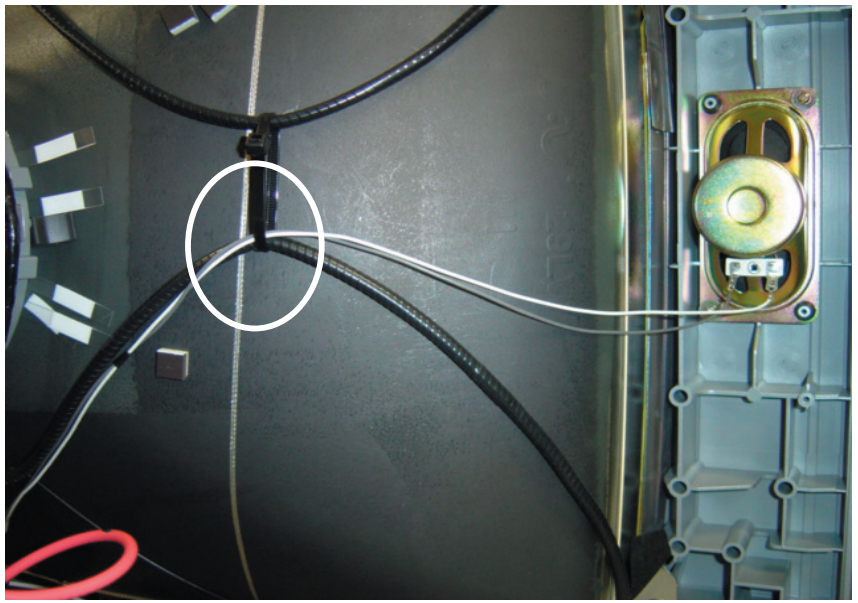
KV-29FA315/29FA515 MODELS ONLY

29FA515, 29FA315, 29FA515C, 29FA315C



Dress right speaker as shown in picture.



- Dress left speaker wire through DGC's tie wrap.

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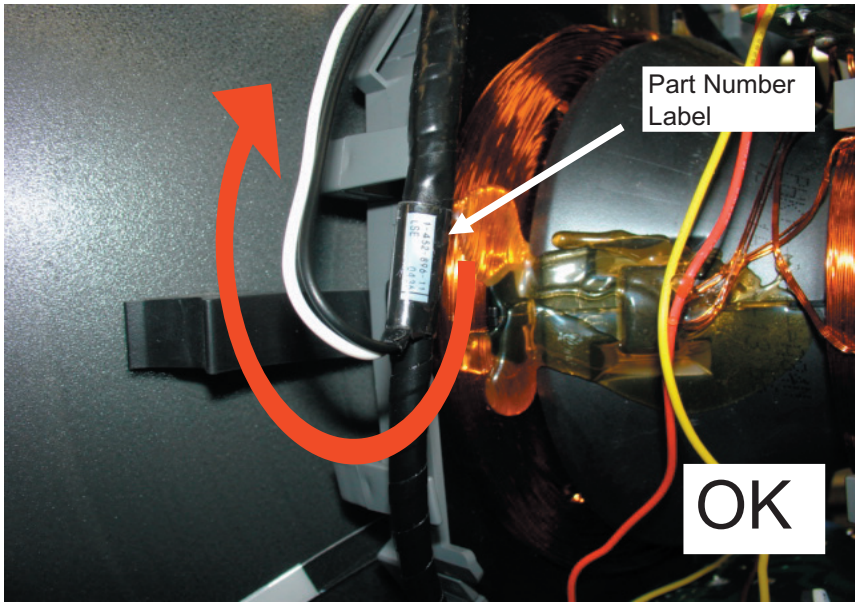
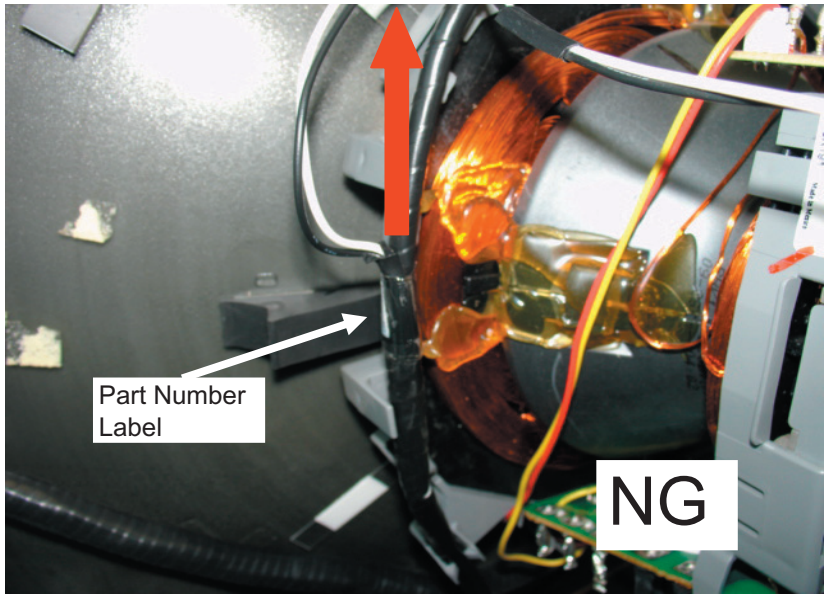
KV-29FA315/29FA515 MODELS ONLY

29FA515, 29FA315, 29FA515C, 29FA315C





CAUTION POINT: Install Rotation coil in the correct position as shown in picture.
NOTE: If Rotation coil is inverted, tilt correction (by menu) will work in different direction.

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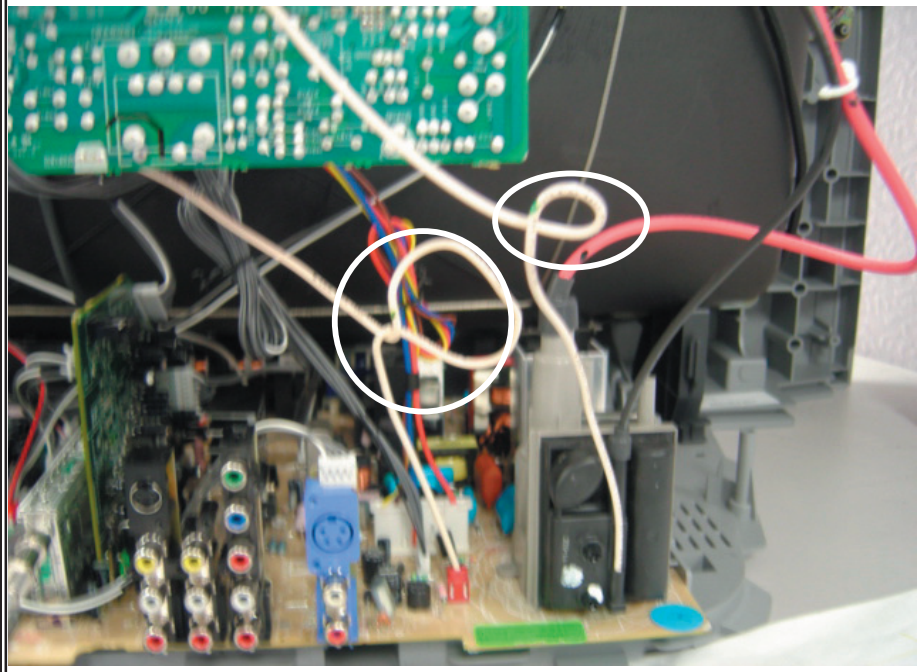
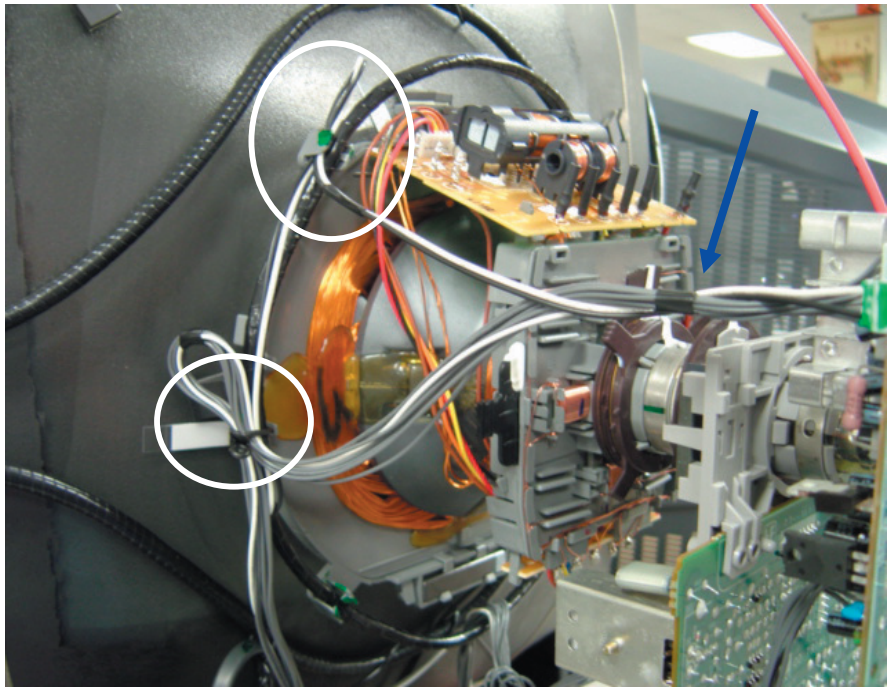
KV-29FA315/29FA515 MODELS ONLY

29FA515, 29FA315, 29FA515C, 29FA315C





Dress G2 and DF wire twist once as picture shown, do not over stress wire.

- Fix RGB harness (MT/CN301~C/CN705) to rotation coil using a 9mm purse lock (3-703-982-02).
- Dress Rotation coil lead wire through DY clip as shown in picture.
Dress RGB & Rotation coil lead wire harnesses interlace twice as picture shows.

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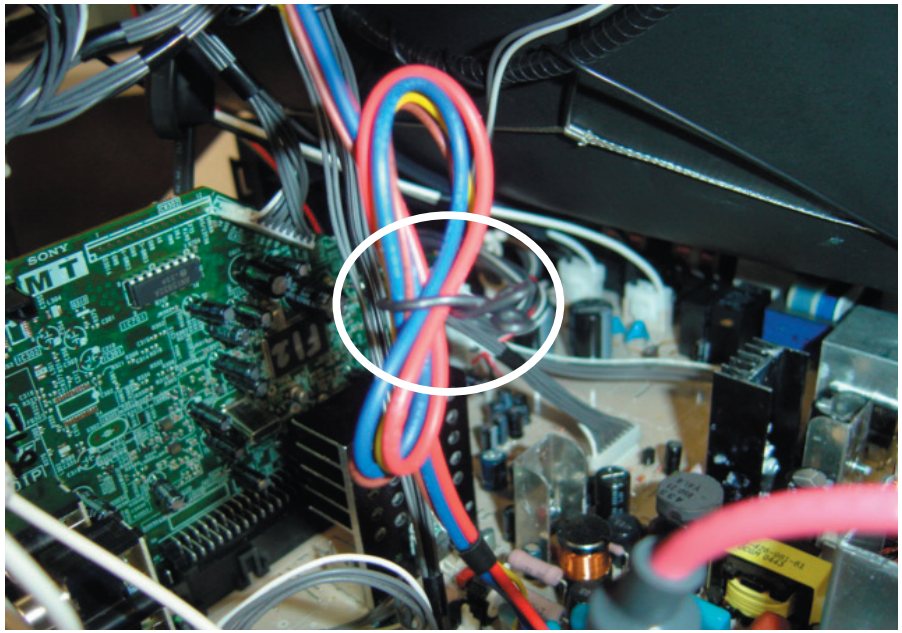
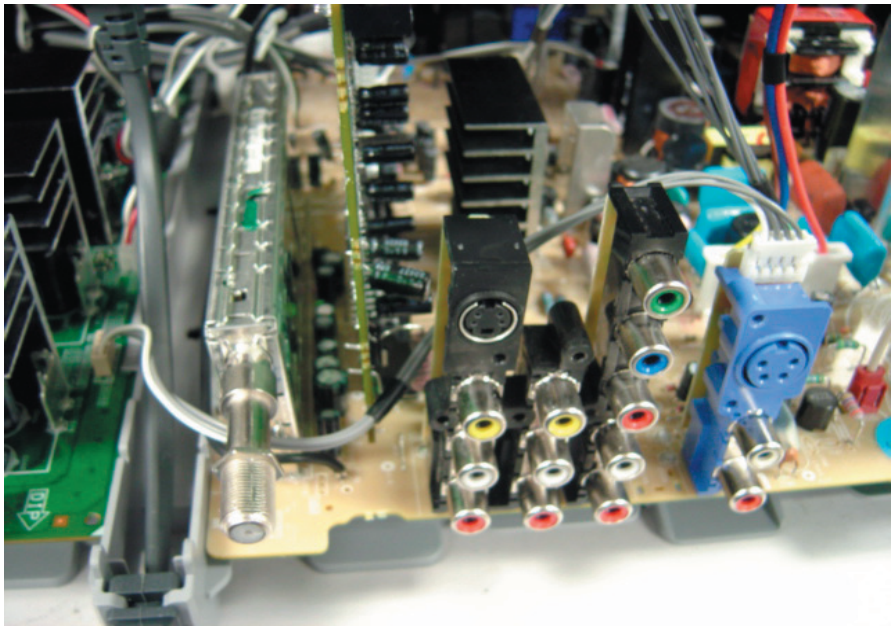
KV-29FA315/29FA515 MODELS ONLY

29FA515, 29FA315, 29FA515C, 29FA315C



Dress DY's lead wire using a 9mm purse lock (3-703-982-02)



Dress subwoofer harness (K/CN2403~A/J207) pass under F-Pin, behind video jacks & over AC cord as picture shown.

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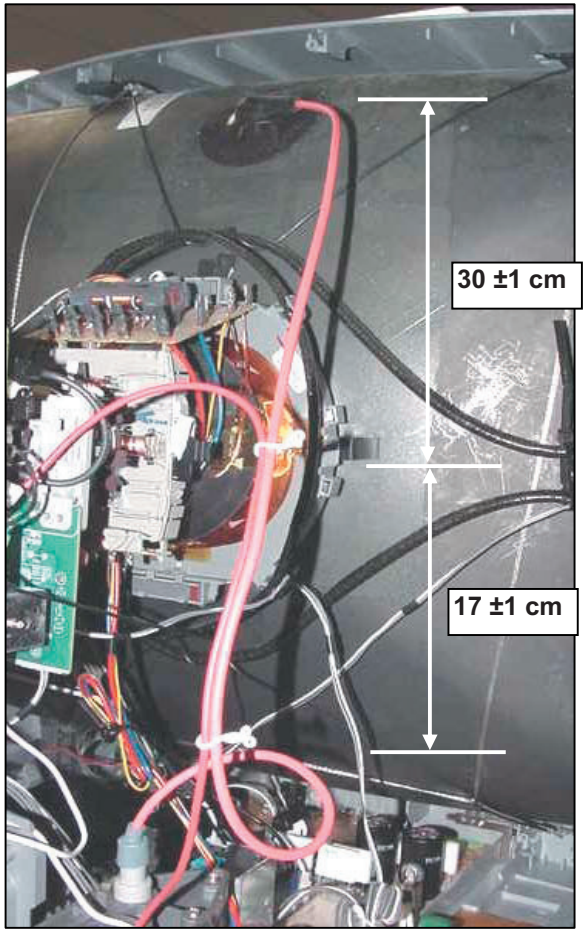
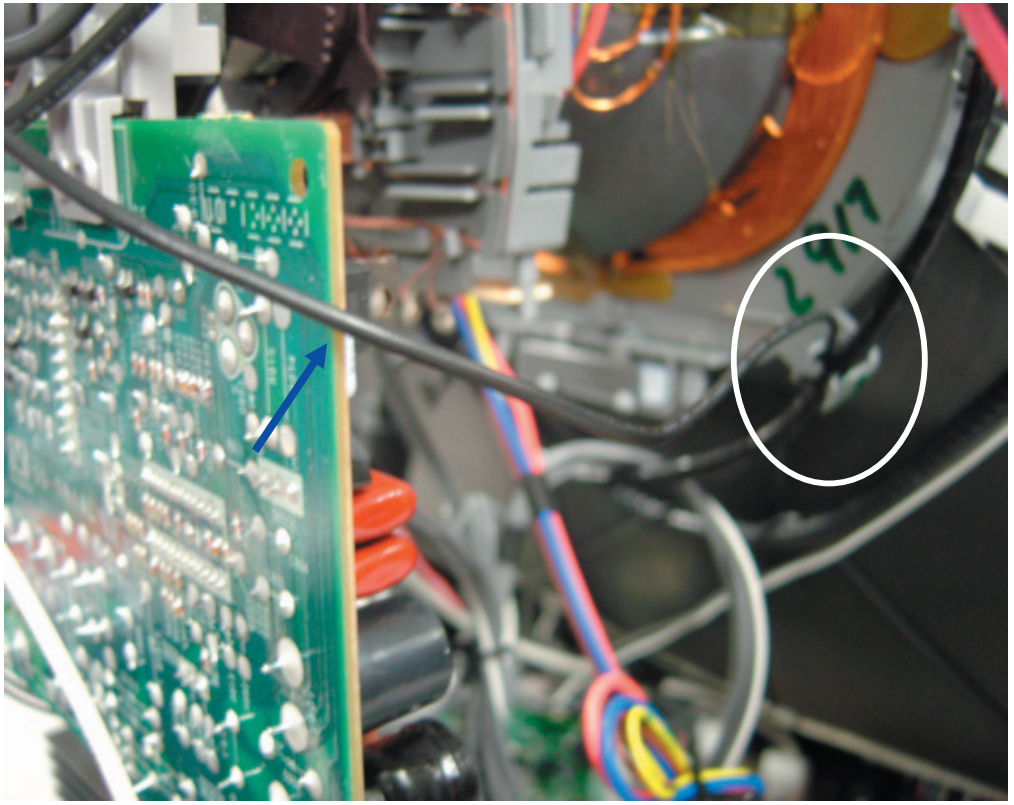
KV-29FA315/29FA515 MODELS ONLY



Dress together focus lead and HV cable using (2) 5mm (3-703-981-02)

29FA515, 29FA315, 29FA515C, 29FA315C



Dress CRT groun through rotation coil and pass beside V board as shown in picture.

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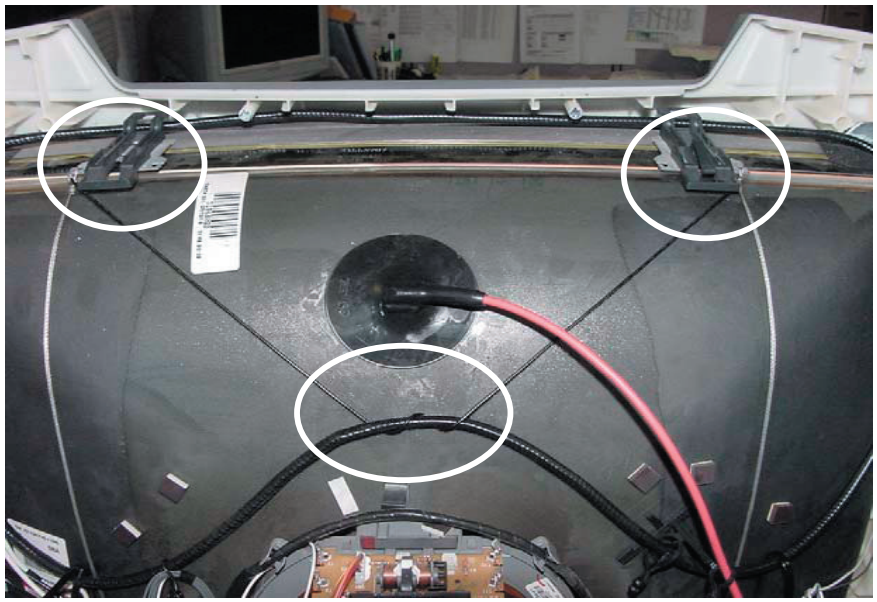
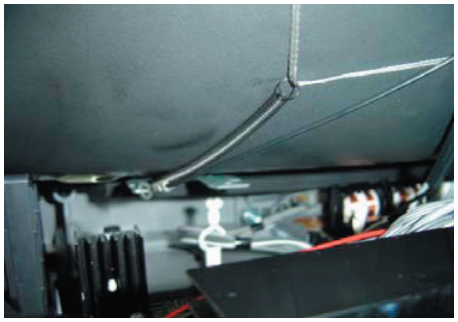
KV-29FA315/29FA515 MODELS ONLY

29FA515, 29FA315, 29FA515C, 29FA315C



Fix DGC coils using (2) strain cables add 2 turns, hook cables on outer CRT hooks,
Use 1 in uper coil and 1 in lower coil.
Hook CRT ground wire (top) and springs(bottom) on outer hooks



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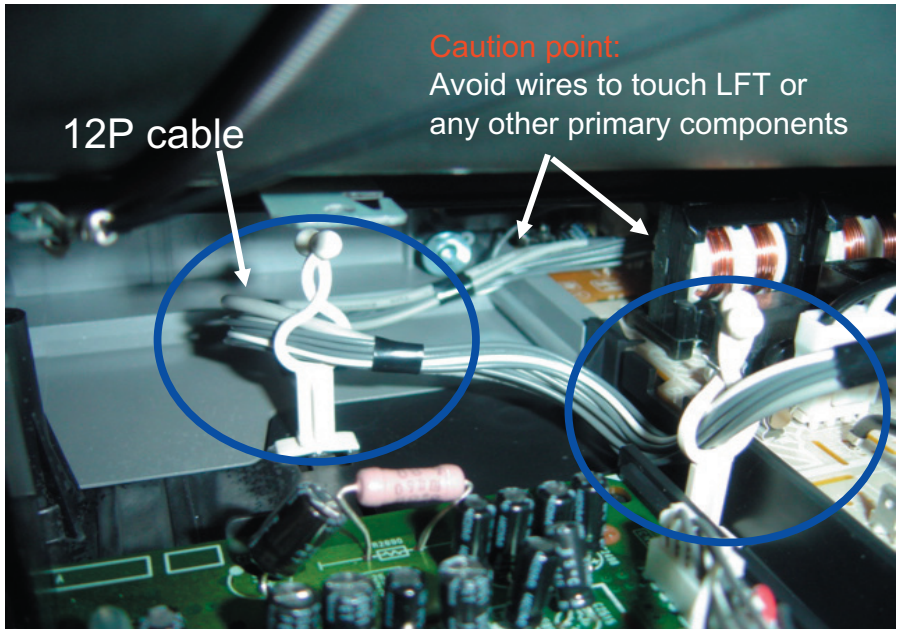
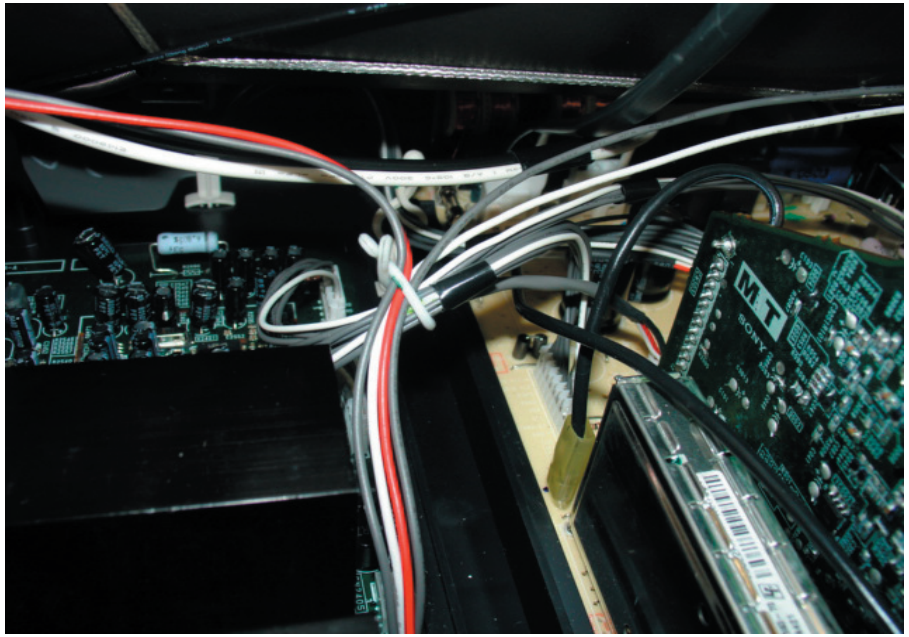
KV-29FA315/29FA515 MODELS ONLY

29FA515, 29FA315, 29FA515C, 29FA315C





- Dress 12P (HC/CN2005~MT/CN303) through purse lock (4-072-499-11) as shown in picture.

- Dress 8P(A/CN411~K/CN2401), 5P (A/CN201~K/CN2600), 3P (A/CN412~K/CN2402) & Speakers cables using a 5mm purse lock (3-703-981-02) as shown in picture.

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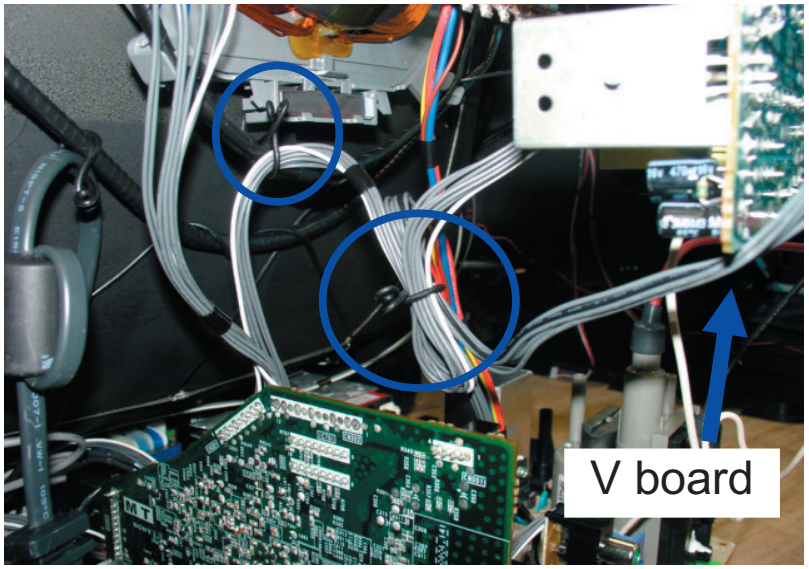
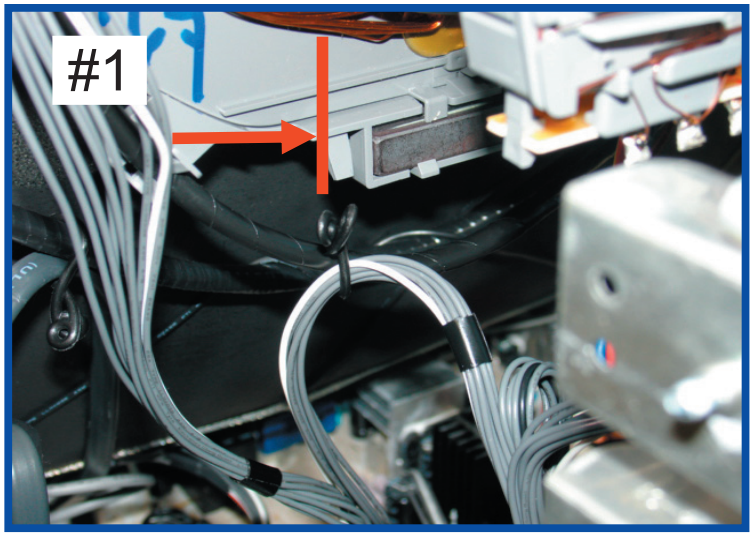
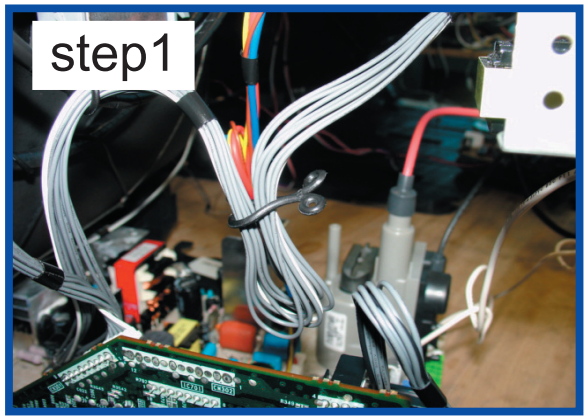
KV-29FA315/29FA515 MODELS ONLY

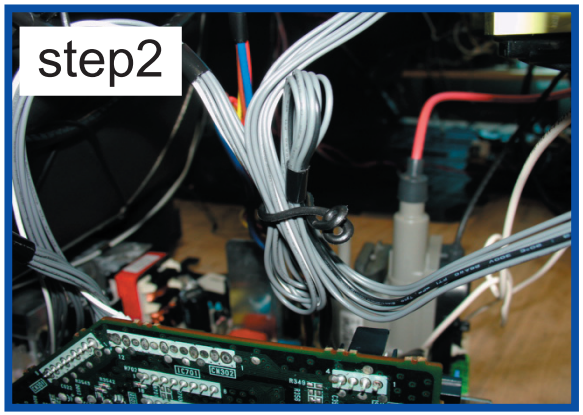
29FA515, 29FA315, 29FA515C, 29FA315C





- Fix VM (A/CN502~V/CN901) harness to rotation coil using a 9mm purse lock (3-703-982-02). Take as reference botton DY's magnet (picture #1).
- Dress VM & Heater harnesses using a 9mm purse lock (3-703-982-02) and pass Heater harness under V board as picture shown. (follow the steps).





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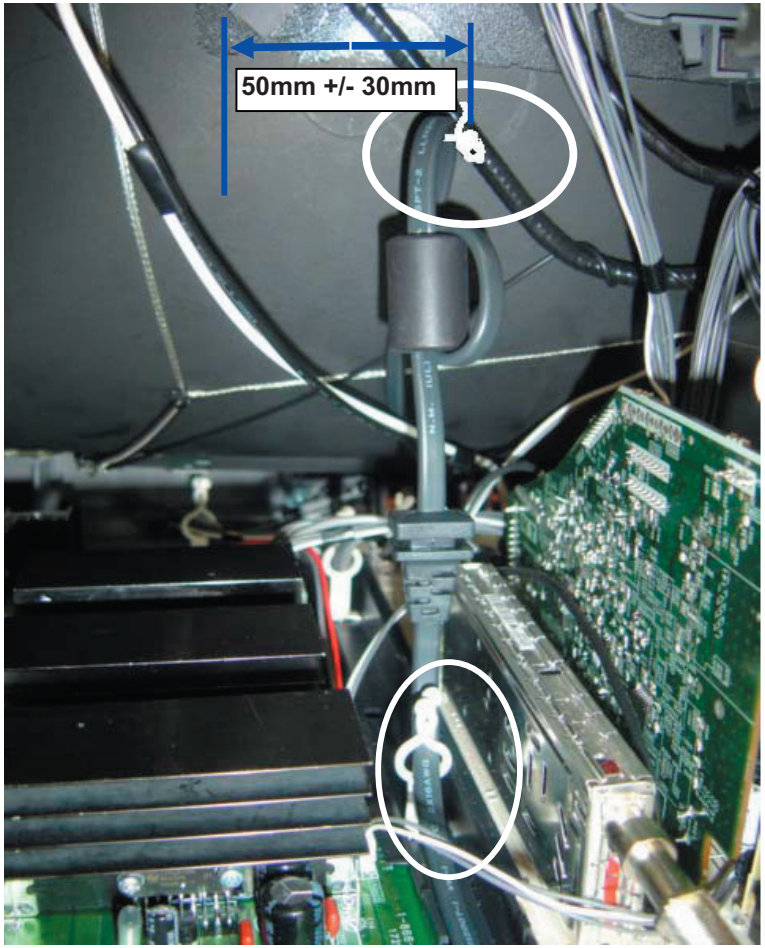
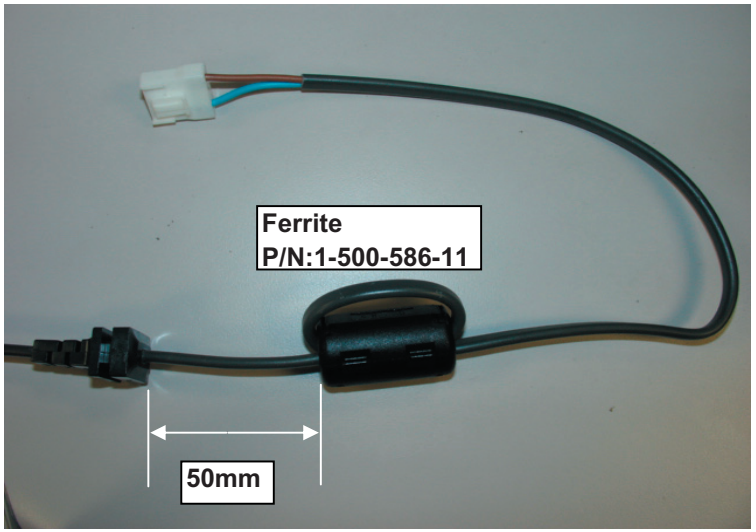
KV-29FA315/29FA515 MODELS ONLY

29FA515, 29FA315, 29FA515C, 29FA315C



ONLY FOR CHILE MODELS



Fix AC-Cord to DGC using a 11mm purse lock (3-703-983-02) & through purse lock (4-072-499-11) as shown in picture. Take as reference carbon line of CRT.

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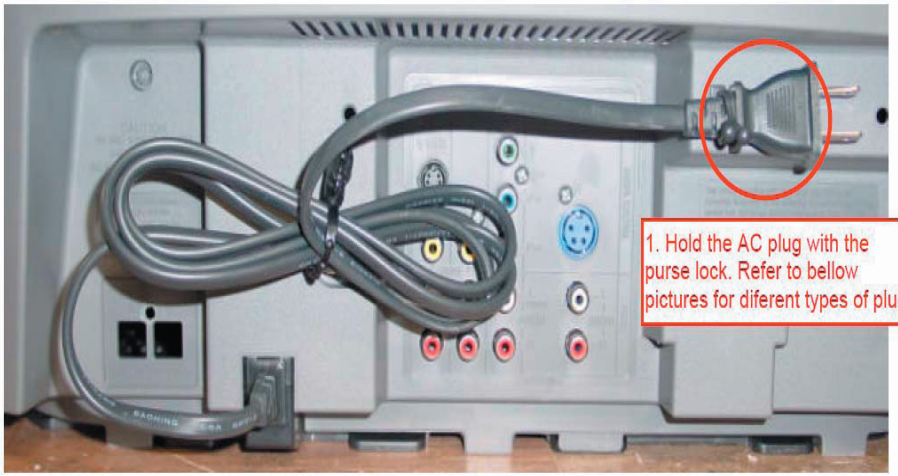
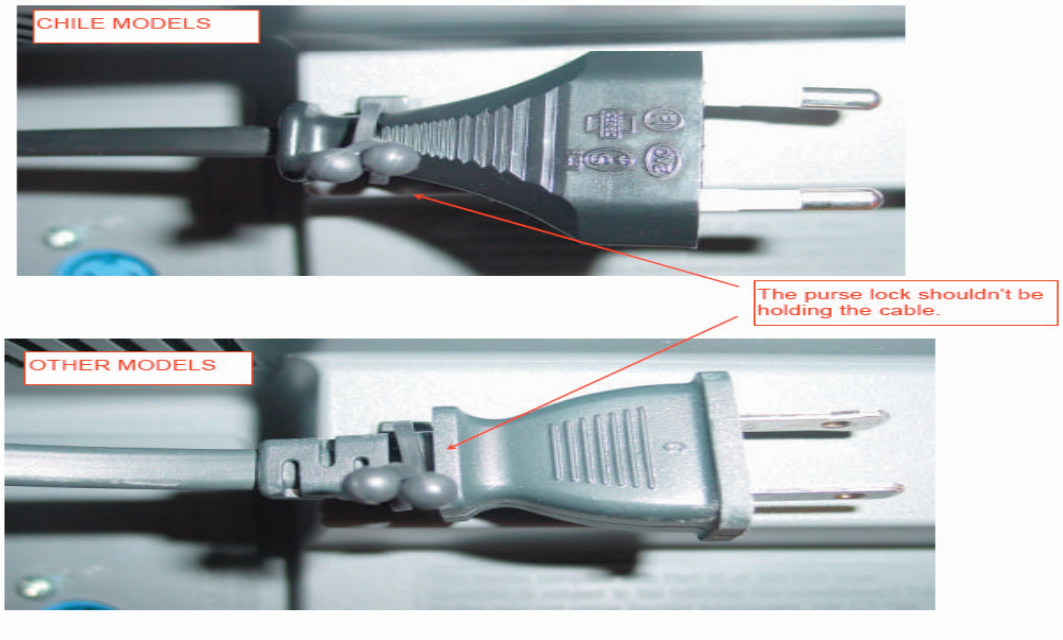
KV-29FA315/29FA515 MODELS ONLY

29FA515, 29FA315, 29FA515C, 29FA315C





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SECTION 2: SET-UP ADJUSTMENTS

The following adjustments should be made when a complete realignment is required or a new picture tube is installed.

These adjustments should be performed with rated power supply voltage unless otherwise noted.

Set the controls as follows unless otherwise noted:
VIDEO MODE: Pro
PICTURE CONTROL: Normal
BRIGHTNESS CONTROL: Normal

Perform the adjustments in order as follows:
1. Beam Landing
2. Convergence
3. Focus
4. Screen (G2)
5. White Balance

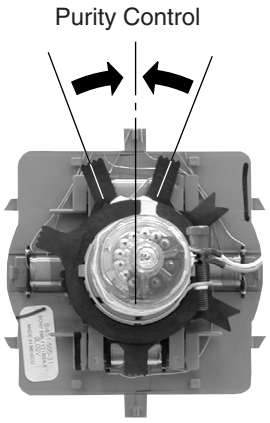
Note Test Equipment Required:
1. Color Bar Pattern Generator
2. Degausser
3. DC Power Supply
4. Digital Multimeter

2-1. BEAM LANDING

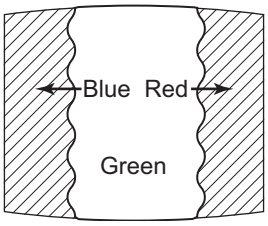
Before beginning adjustment procedure:
1. Feed in the white pattern signal.

Adjustment Procedure

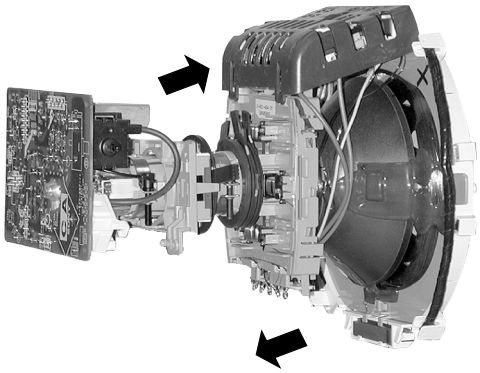
1. Input a raster signal with the pattern generator.
2. Loosen the deflection yoke mounting screw, and set the purity control to the center as shown below:

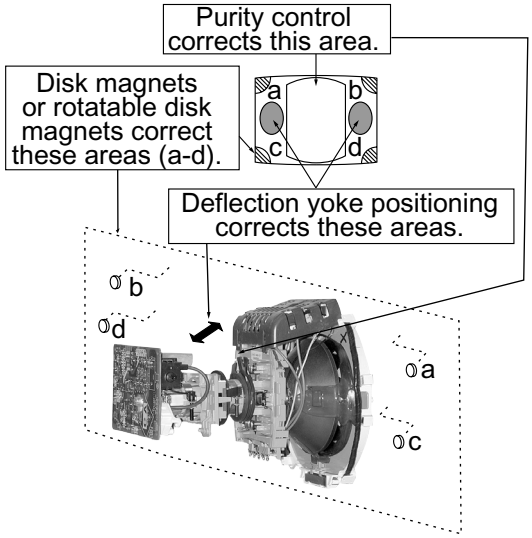


3. Turn the raster signal of the pattern generator to green.
4. Move the deflection yoke backward, and adjust with the purity control so that green is in the center and red and blue are even on both sides.



5. Move the deflection yoke forward, and adjust so that the entire screen becomes green.
6. Switch over the raster signal to red and blue and confirm the condition.
7. When the position of the deflection yoke is determined, tighten it with the deflection yoke mounting screw.
8. If landing at the corner is not right, adjust by using the disk magnets.





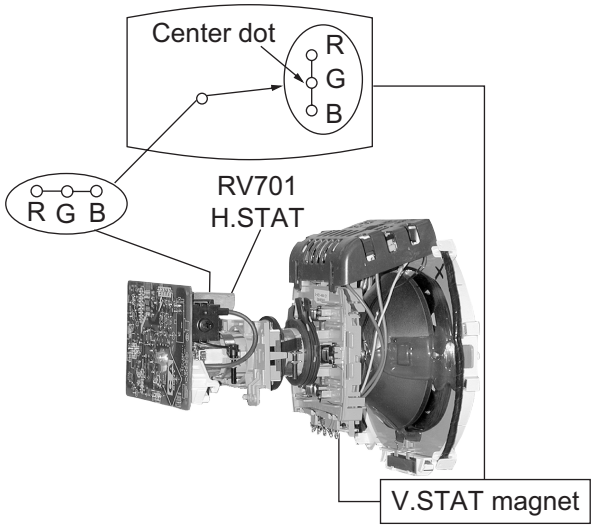
2-2. CONVERGENCE

Before starting convergence adjustments:

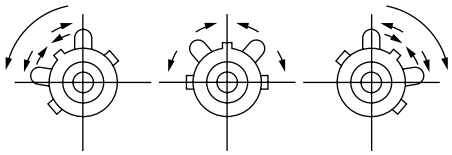
1 Perform FOCUS, VLIN and VSIZE adjustments.
2. Set BRIGHTNESS control to minimum.
3. Feed in dot pattern.

Vertical Static Convergence

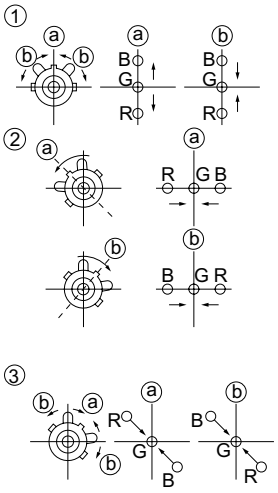
1. Adjust V. STAT magnet to converge red, green and blue dots in the center of the screen.



2. Tilt the V. STAT magnet and adjust static convergence to open or close the V. STAT magnet.



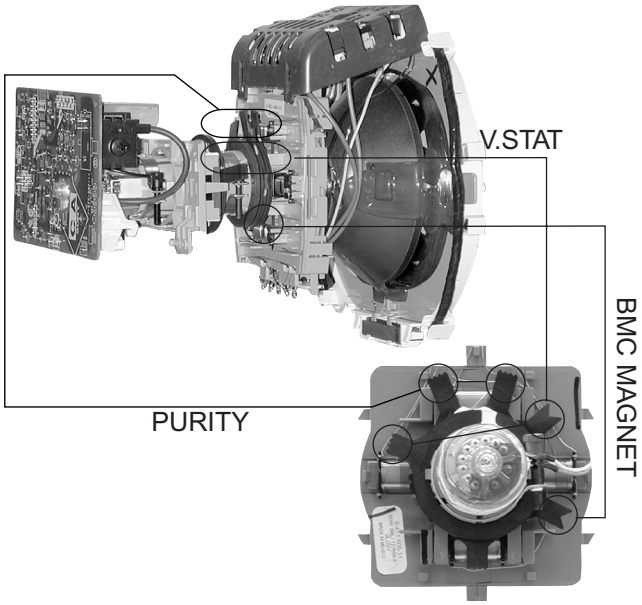
When the V. STAT magnet is moved in the direction of arrow a and b, red, green, and blue dots move as shown below:



Horizontal Static Convergence

If the blue dot does not converge with the red and green dots, perform the following:

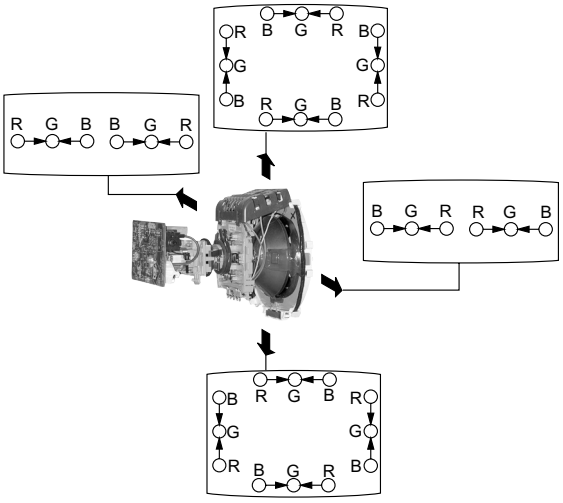
1. Move H STAT VR magnet (a) to correct insufficient H.Static convergence.



Dynamic Convergence Adjustment

Before performing this adjustment, perform Horizontal and Vertical Static Convergence Adjustment.

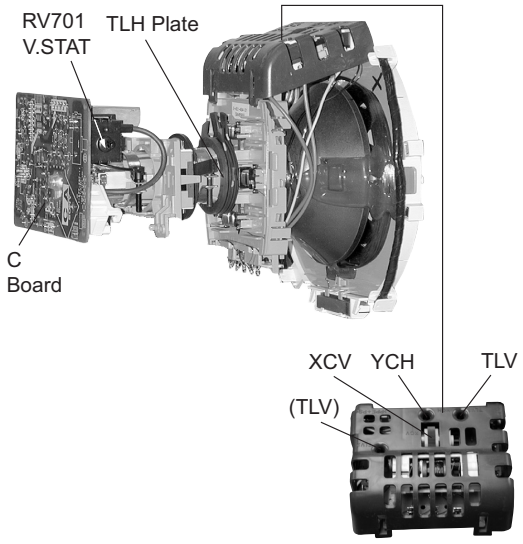
1. Slightly loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Move the deflection yoke for best convergence as shown below:

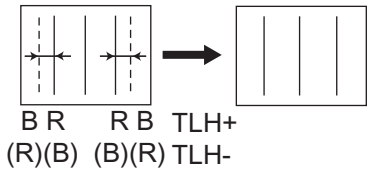


4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.

TLH Plate Adjustment

1. Input crosshatch pattern.
2. Adjust PICTURE QUALITY to standard, PICTURE and BRIGHTNESS to 50%, and OTHER to standard.
3 Adjust the Horizontal Convergence of red and blue dots by tilting the TLH plate on the deflection yoke.

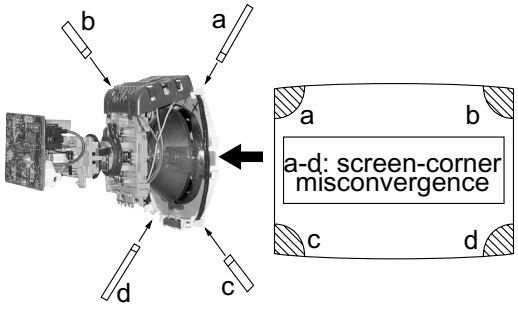




4. Adjust XCV core to balance X axis.
5. Adjust YCH VR to balance Y axis.
6. Adjust vertical red and blue convergence with V.TILT (TLV VR.)
   Note: Perform adjustment 3-6 while tracking OSD items 1 and 2.

Screen-Corner Convergence

1. Affix a permalloy assembly corresponding to the misconverged areas:

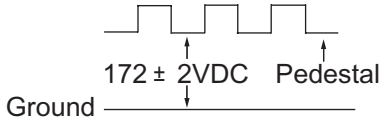


2-3. FOCUS

1. Adjust FOCUS control for best pictures.

2-4. SCREEN (G2)

1. Input a dot pattern.
2. Set the PICTURE and BRIGHTNESS controls at minimum and COLOR control at normal.
3. Adjust SBRT, GCUT, BCUT in service mode with an oscilloscope as shown below so that voltages on the red, green, and blue cathodes are 172 ± 2VDC.



4. Observe the screen and adjust SCREEN (G2) VR in FBT to obtain the faintly visible background of dot signal.

SECTION 3: SAFETY RELATED ADJUSTMENTS

3-1. ⋈ R530, R531 CONFIRMATION METHOD (HV HOLD-DOWN CONFIRMATION) AND READJUSTMENTS

The following adjustments should always be performed when replacing the following components which are marked with ◪ on the schematic diagram:

Part Replaced (◪)	Adjustment (⋈)
C531, C532, D519, D520, D521, IC501, IC600, PH602, R529, R530, R531, R532, R533, R550, T503 (FBT), T504 (DFT)	HV HOLD-DOWN R530, R531

Preparation Before Confirmation

1. Using a Variac, apply AC input voltage: 120 +/- 2.0 VAC.
2. Turn the POWER switch ON.
3. Input a white signal and set the PICTURE and BRIGHT controls to maximum.
4. Confirm that the voltage of more than 23.0 VDC appears between TP85 and ground on the A Board.

Hold-Down Operation Confirmation

1. Connect the current meter between Pin 11 of the FBT (T503) and the PWB land where Pin 11 would normally attach. (See Figure 1).
2. Input a dot signal and set PICTURE and BRIGHTNESS to minimum: IABL = 2175 + 100/ -325 µA.
3. Confirm the voltage of A Board TP91 is 134.6 ± 1.0 VDC.
4. Connect the digital voltmeter and the DC power supply to TP85 and ground. (See Figure 1).
5. Increase the DC power voltage gradually until the picture blanks out.
6. Turn DC power source off immediately.
7. Read the digital voltmeter indication:
   KV-27FS320 Only (standard = 24.78 + 0.0/ - 0.1 VDC).
   All except KV-27FS320 (standard = 27.24 + 0.0/ - 0.1 VDC).
8. Input a white signal and set PICTURE and BRIGHTNESS to maximum: IABL = 2175 + 100/ -325 µA.
9. Repeat steps 4 to 7.

Hold-Down Readjustment

If the setting indicated in Step 2 of Hold-Down Operation Confirmation cannot be met, readjustment should be performed by altering the resistance value of R530, R531 component marked with ⋈.

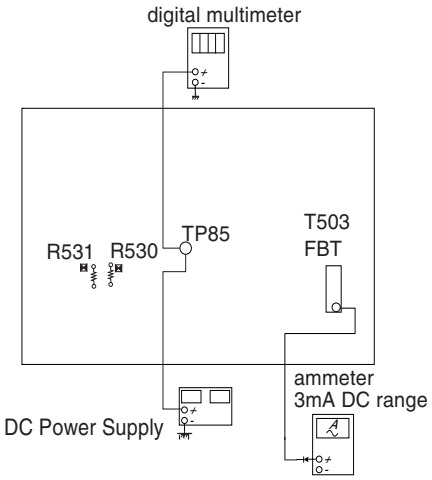


Figure 1

3-2. B+ VOLTAGE CONFIRMATION AND ADJUSTMENT

Always perform the following adjustments when replacing the following components, which are marked with ◪ on the schematic diagram on the A Board:

Adjustment (◪)
A BOARD IC600, PH602

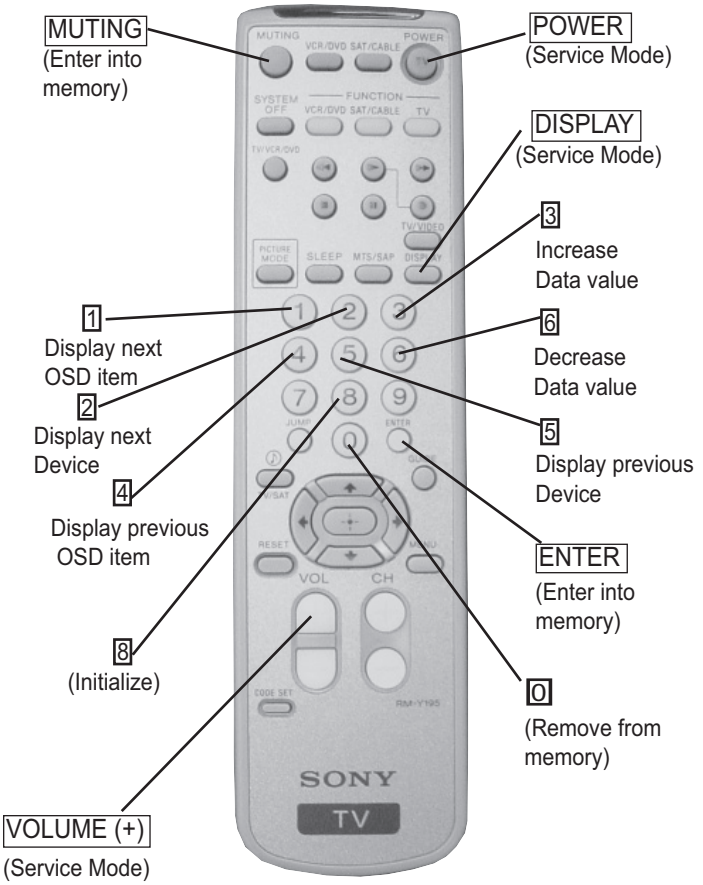
1. Using a Variac, apply AC input voltage: 130 + 2.0/-0.0 VAC
2. Input a monoscope signal.
3. Set the PICTURE control and the BRIGHT control to minimum.
4. Confirm the voltage on A Board between TP23 and ground is less than 136.5 VDC.
5. If step 4 is not satisfied, replace R530 and R531 on A Board and repeat the above steps.

SECTION 4: CIRCUIT ADJUSTMENTS

Electrical Adjustments by Remote Commander

Use the Remote Commander (RM-Y195) to perform the circuit adjustments in this section.
Test Equipment Required: 1. Pattern generator 2. Frequency counter 3. Digital multimeter 4. Audio oscillator

4-1. REMOTE ADJUSTMENT BUTTONS AND INDICATORS

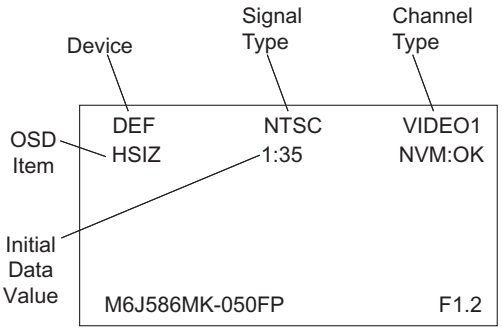


RM-Y195

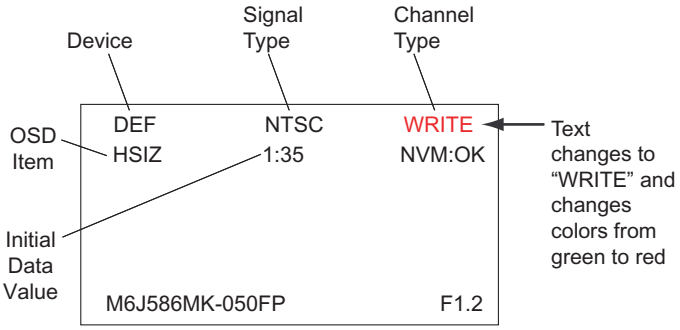
4-2. ACCESSING THE SERVICE ADJUSTMENT MODE

1. Standby mode (Power off).
2. Press the following buttons on the remote commander within a second of each other:
   DISPLAY ➡ Channel 5 ➡ Sound Volume + ➡ POWER

The screen displays the first service data device OSD item.



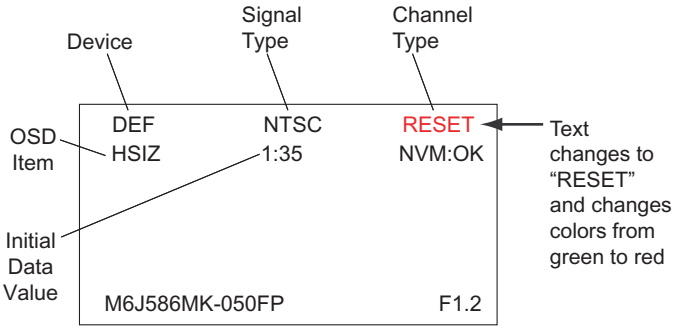
1. On the Remote Commander press 2 or 5 to select the device.
2. Press 1 or 4 to select the OSD.
3. Press 3 or 6 to change the data value.
4. Press MUTING then ENTER to write into memory.



Service Adjustment Mode Memory

Use the following procedure when adjusting IDs 0-7 and when replacing and adjusting IC002.

1. Access Service Adjustment Mode.
2. Press 8 then ENTER on the Remote Commander to initialize.



The TV powers off after completing the initialization process.

4-3. CONFIRMING SERVICE ADJUSTMENT CHANGES

1. After completing adjustments, pull out the plug from the AC outlet, then replace the plug in the AC outlet again.
2. Access Service Adjustment Mode.
3. Using the buttons on the Remote Commander, locate the adjusted OSD items again to confirm they were adjusted.

4-4. SERVICE DATA LISTS

Device "DEF"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA			Initial Data (DEC) 21FA		
Var 1	HSIZ	H SIZE(EW DC)	RF/AV/YUV	34	34	35	39	38	38
Var 2	HPOS	H POSITION	RF/AV/YUV	15	16	16	13	24	18
Var 3	VSIZ	V RAMP SIZE	RF/AV/YUV	33	34	35	33	31	30
Var 4	VPOS	V POSITION(RAMP DC)	RF/AV/YUV	35	36	36	31	31	31
Var 5	VLIN	V LINEARITY			35			39	
Var 6	SCOR	S CORRECTION			52			33	
Var 7	VBOW	BOW			31			37	
Var 8	VANG	ANGLE			37			40	
Var 9	TRAP	EW TRAPESIUM			32			37	
Var 10	PAMP	EW PIN			28			22	
Var 11	UPIN	UPPER PIN			29			32	
Var 12	LPIN	LOWER PIN			28			31	
Var 13	TROT	TROT			108			71	
Var 14	HBLK	H BLK mode select			00			00	
Var 15	RBLK	HBLK rear timing	RF/AV/YUV	28	28	27	30	32	32
Var 16	LBLK	HBLK front timing	RF/AV/YUV	48	47	46	49	50	51
Var 17	VBLK	V BLK width			03			03	
18	HMSK	TOP VEND(when MACROVISION)prevent OFF			00			00	
19	HDW	H PULSE WIDTH(25u/19u)			1			1	
20	AFC	AFC GAIN			00			00	
21	AFC1	AFC1 TIME CONSTANT	RF/AV/YUV	03	03	03	03	03	03
22	AFCW	AFC1 PULL IN WIDE			01			01	
23	CDMD	V DET WINDOW SW TIMING			01			01	
24	HSS	SYNC SLICE LEVEL(H sepa)			00			00	
25	VSS	SYNC SLICE LEVEL(V sepa)			03			03	
26	SLUD	Auto Slice level UP/DOWN			00			00	
27	JPSW	Jump SW			00			00	
28	HOSC	H VCO fo offset ADJUST OFFSET			03			03	
29	EHT	EHT			04			04	
30	EHTG	EHT MODE			01			01	
31	SLOH	LPF SYNC H			01			01	
32	SLOV	LPF SYNC V			03			03	
33	SLOP	LPF SYNC			03			03	
34	SLVC	LPF SYNC VCOIN OFF			00			00	
35	SLHC	LPF SYNC HCOIN OFF			00			00	
36	VF50	VFREERUN 50Hz			00			00	
37	VSET	V FREQ SET 50\60/AUTO			00			00	

Device "16:9"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
Var 1	VSIZ	V RAMP SIZE		39	29
Var 2	VPOS	V POSITION(RAMP DC)		38	33
Var 3	VLIN	V LINEARITY		35	36
Var 4	SCOR	S CORRECTION		27	17
Var 5	TRAP	EW TRAPESIUM		30	32
Var 6	PAMP	EW PIN		13	9
Var 7	UPIN	UPPER PIN		31	31
Var 8	LPIN	LOWER PIN		30	30
Var 9	ABLG	ABL GAIN		15	15
Var 10	SCON	SUB CONTRAST LEVEL		20	15
Var 11	VPW	Jump Pulse Width		01	01
Var 11	Vang	ANGLE		37	37

Device "VP1"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
Var 1	RDRV	R DRIVE		84	74
Var 2	GDRV	G DRIVE when Color Temp. is "Cool" and "Neutral"	RF&AV/ YUV	60 55	70 71
Var 3	BDRV	B DRIVE when Color Temp. is "Cool" and "Neutral"	RF&AV/ YUV	54 49	55 57
Var 4	RCUT	Hardware AKB(R) CMP DATA		100	100
Var 5	GCUT	Hardware AKB(G) CMP DATA when Color Temp. is "Cool" and "Neutral"	RF&AV/ YUV	101 87	86 83
Var 6	BCUT	Hardware AKB(B) CMP DATA when Color Temp. is "Cool" and "Neutral"	RF&AV/ YUV	89 79	77 74
Var 7	SCON	SUB CONTRAST LEVEL		18	10
Var 8	SHUE	SUB TINT(HUE)	RF/AV/YUV	11 08 07	09 07 08
Var 9	SCOL	SUB COLOR LEVEL for Not NR	RF/AV/YUV	11 11 24	13 12 25
Var 10	SBRT	SUB BRIGHTNESS	RF&AV/YUV	6 9	10 14
Var 11	RON	R OUTPUT ON (0:R Output OFF 1:R Output ON)		01	01
Var 12	GON	G OUTPUT ON (0:G Output OFF 1:G Output ON)		01	01
Var 13	BON	B OUTPUT ON (0:B Output OFF 1:B Output ON)		01	01
14	BLLV	BLUE STRETCH(00:no <-> 11:deep) only Color Temp "Cool"		01	01
15	BLLM	BLUE STRETCH Y LEREL LIMIT LEVEL		00	01
16	MTRX	MATRIX RATIO SELECT		01	01
17	AXIS	R-Y PHASE OFFSET		52	52
18	GYG	G-Y Gain		00	00
19	GYP	G-Y PHASE		00	00
20	SSHO	SUB SHARPNESS GAIN(OVER) RF/VIDEO	RF/AV/YUV	12 14 02	06 08 02
21	SSHP	SUB SHARPNESS GAIN(PRE) RF/VIDEO	RF/AV/YUV	16 19 13	10 14 13
22	SHPF	SHRPNESS fo(00:2 CLK <-> 11:5 CLK)	RF/AV/YUV	0 1 0	0 1 0
23	SHCL	SHARPNESS CORING LEVEL		01	01
24	SHMX	SHARPNESS LIMITTER LEVEL		15	15
25	AKBD	AKB Self Diagnostic Counter(@1sec)		05	05
26	AKBS	AKB Switch (0 : AKB OFF 1 : H/W AKB ON)		01	01
27	REFP	AKB REFPLS timing ("0"Fix when 16:9On)		00	00
28	YNRC	YNR LIMITER LEVEL		15	15
29	VYNR	VYNR LIMITER LEVEL		00	00
30	BKON	BLACK STRETCH ON		01	01
31	BKRH	BLACK STRETCH DETECTOR TIME CONSTANT1		Pallete	Pallete
32	BKRL	BLACK STRETCH DETECTOR TIME CONSTANT2		Pallete	Pallete
33	BKDP	BLACK STRETCH START POINT		Pallete	Pallete
34	BKSP	BLACK STRETCH POINT		Pallete	Pallete
var 35	UOFS	U IN OFFSET	RF&AV/ YUV	32 70	32 76
var 36	VOFS	V IN OFFSET	RF&AV/ YUV	96 73	96 72
36	TAKE	BPF F0 UP	RF/AV/YUV	00 00 00	00 00 00
37	TAKW	BPF F0 UP WIDTH	RF/AV/YUV	00 00 00	00 00 00

Device "VP2"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
1	VMOF	VM LEVEL at "Off" Setting		02	02
2	VMLO	VM LEVEL at "Low" Setting		05	05
3	VMHI	VM LEVEL at "High" Setting		11	11
4	VMDL	VM DELAY	RF/AV/YUV	11 11 8	11 11 8
5	VMPL	VM PORALITY		01	01
6	VMWD	VM WIDTH		00	00
7	VMCL	VM CORING LEVEL		00	00
8	VMMX	VM LIMITER LEVEL		15	15
9	CKLV	COLOR KILLER VTH		01	01
10	CKON	FORCE KILLER		00	00
11	VACL	V APERTURE CORING LEVEL		00	00
12	VAGA	V APERTURE GAIN LEVEL		Pallete	Pallete
13	VAMX	V APERTURE LIMITER LEVEL		15	04
14	GAMM	GAMMA(00:no <-->11:deep)		Pallete	Pallete
15	YDLY	Y DELAY TIME		03	03
16	CDLY	C DELAY		02	02
17	BGPP	BGP(for C DECODER)TIMING		11	11
18	GDOF	G DRIVE OFFSET only Color Temp. "Warm"		18	18
19	BDOF	B DRIVE OFFSET only Color Temp. "Warm"		31	31
20	GCOF	GCUT CMP DATA OFFSET only Color Temp. "Warm"		02	02
21	BCOF	BCUT CMP DATA OFFSET only Color Temp. "Warm"		04	04
22	DCTV	DCTRANSFER VTH		03	03
23	DCTG	DCTRANSFER GAIN		Pallete	Pallete

Device "Y/C"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
1	ALFA	ADAPTIVE DET SENSITIVITY		01	01
2	YCMD	YC SEPA FORCE SELECT(00:ADAPTIVE 01:H 10:V 11:HV)		00	00

Device "NR"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
1	NRBP	NOISE DET BPF		00	00
2	NRLS	NOISE DET POS		00	00
3	NRDT	NOISE DET CORING LEVEL		01	01
4	INDX	WSL INDEX FOR MULTI LEVEL DATA SELECTION	Index 1/2/3	01 02 03	01 02 03
5	TRHI	TRIGGER LEVEL HIGH	Index 1/2/3	27 50 67	27 50 67
6	TRLO	TRIGGER LEVEL LOW	Index 1/2/3	30 55 87	30 55 87
7	SHCL	SHARPNESS NOISE CORING LEVEL for NR	Index 1/2/3	15 15 15	15 15 15
8	SHMX	SHARPNESS LIMITTER LEVEL for NR	Index 1/2/3	07 10 07	07 10 07
9	YNRS	YNR ON for NR	Index 1/2/3	01 01 01	01 01 01
10	YNRC	YNR LIMITER LEVEL for NR	Index 1/2/3	07 06 15	07 06 15
11	VMHI	VM LEVEL at "High" Setting for NR	Index 1/2/3	07 07 07	07 07 07
12	VMCL	VM CORING LEVEL for NR	Index 1/2/3	00 00 00	00 00 00
13	VMMX	VM LIMITER LEVEL for NR	Index 1/2/3	07 07 07	07 07 07
14	VAGA	V APERTURE GAIN LEVEL for NR	Index 1/2/3	00 03 00	00 03 00
15	VAMX	V APERTURE LIMITER LEVEL	Index 1/2/3	10 06 04	10 06 04
16	VYNR	VYNR LIMITER LEVEL	Index 1/2/3	03 09 15	03 09 15
17	YDT	Y DITHER LEVEL	Index 1/2/3	00 00 00	00 00 00
18	GAMM	GAMMA(00:no <-->11:deep) for NR	Index 1/2/3	03 02 00	03 02 00
19	WSTH	WEAK_SIGNAL VTH for NR	Index 1/2/3	00 07 07	00 07 07
20	WSVA	WEAK SIGNAL VIDEO ATT for NR	Index 1/2/3	00 00 00	00 00 00
21	WSCA	WEAK SIGNAL CHROMA ATT for NR	Index 1/2/3	00 03 03	00 03 03

Device "PALLET" for "VIVID"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
1	VPIC	Picture(VIVID)		63	63
2	VBRI	Brightness(VIVID)		32	33
3	VCOL	Color(VIVID)		30	32
4	VHUE	Hue(VIVID)		31	31
5	VSHA	Sharpness(VIVID)		35	35
6	VVM	VM(VIVID)		02	02
7	VTRI	Color Temp(VIVID)		00	00
8	VAPA	Aperture G(VIVID)		07	07
9	VGMA	Gamma(VIVID)		02	01
10	VDCT	DCT LV(VIVID)		12	12
11	BKDP	BLACK STRETCH DEPTH(VIVID)		03	03
12	BKRC	BLACK ST TIME1 , BLACK ST TIME2(VIVID)		252	252
13	BKSP	BLACK STRETCH POINT(VIVID)		02	02
14	CONO	CONTRAST OFFSET for RF(VIVID)		00	00
15	COOF	Contrast Offset		00	00

Device "PALLET" for "STD"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
1	VPIC	Picture(STANDARD)		50	50
2	VBRI	Brightness(STANDARD)		31	31
3	VCOL	Color(STANDARD)		31	31
4	VHUE	Hue(STANDARD)		31	31
5	VSHA	Sharpness(STANDARD)		37	37
6	VVM	VM(STANDARD)		01	01
7	VTRI	Color Temp(STANDARD)		01	01
8	VAPA	Aperture G(STANDARD)		04	04
9	VGMA	Gamma(STANDARD)		01	01
10	VDCT	DCT LV(STANDARD)		09	09
11	BKDP	BLACK STRETCH DEPTH(STANDARD)		02	02
12	BKRC	BLACK ST TIME1 , BLACK ST TIME2(STANDARD)		252	252
13	BKSP	BLACK STRETCH POINT(STANDARD)		01	01
14	CONO	CONTRAST OFFSET for RF(STANDARD)		00	00
15	COOF	Contrast Offset		00	00

Device "PALLET" for "MOVIE"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
1	VPIC	Picture(MOVIE)		37	37
2	VBRI	Brightness(MOVIE)		28	28
3	VCOL	Color(MOVIE)		31	31
4	VHUE	Hue(MOVIE)		31	31
5	VSHA	Sharpness(MOVIE)		34	34
6	VVM	VM(MOVIE)		01	01
7	VTRI	Color Temp(MOVIE)		02	02
8	VAPA	Aperture G(MOVIE)		03	03
9	VGMA	Gamma(MOVIE)		01	01
10	VDCT	DCT LV(MOVIE)		09	09
11	BKDP	BLACK STRETCH DEPTH(MOVIE)		01	01
12	BKRC	BLACK ST TIME1 , BLACK ST TIME2(MOVIE)		252	252
13	BKSP	BLACK STRETCH POINT(MOVIE)		01	01
14	CONO	CONTRAST OFFSET for RF(MOVIE)		00	00
15	COOF	Contrast Offset		00	00

Device "PALLET" for "Pro"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
1	VPIC	Picture(Pro)		31	33
2	VBRI	Brightness(Pro)		31	31
3	VCOL	Color(Pro)		31	31
4	VHUE	Hue(Pro)		31	31
5	VSHA	Sharpness(Pro)		31	31
6	VVM	VM(Pro)		00	00
7	VTRI	Color Temp(Pro)		01	01
8	VAPA	Aperture G(Pro)		00	00
9	VGMA	Gamma(Pro)		00	00
10	VDCT	DCT LV(Pro)		02	02
11	BKDP	BLACK STRETCH DEPTH(Pro)		01	01
12	BKRC	BLACK ST TIME1 , BLACK ST TIME2(Pro)		252	252
13	BKSP	BLACK STRETCH POINT(Pro)		00	00
14	CONO	CONTRAST OFFSET for RF(Pro)		00	00
15	COOF	Contrast Offset		00	00

Device "ASIC"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
1	YNRS	YNR ON		0	0
2	CLPS	CLAMP CONTROL SW 0:CLAMP OFF 1:CLAMP AUTO 2:CLAMP ON		1	1
3	VMG2	MODULATOR FEEDBACK GAIN CONTROL		1	2
4	CLPT	CLAMP AUTO ON KEEP TIMER COUNT (@100ms)		15	15
5	AASL	C DECODER TIME CONSTANT(32,16,8,1H)		2	2
6	BASL	ACC TIME CONSTANT		0	0
7	ACTH	ROM HYS		95	95
8	AVAV	AVE SEL AV		3	3
9	B2TH	B2COMP		0	0
10	CORL	R CUTOFF lower		0	0
11	CORH	R CUTOFF upper		1	1
12	COGL	G CUTOFF lower when Color Temp. is "Cool" and "Neutral"		0	0
13	COGH	G CUTOFF upper when Color Temp. is "Cool" and "Neutral"		1	1
14	COBL	B CUTOFF lower when Color Temp. is "Cool" and "Neutral"		0	0
15	COBH	B CUTOFF upper when Color Temp. is "Cool" and "Neutral"		1	1
16	ALSP	ACL SPEED		0	0
17	ALAS	ACL ATACK SPEED		146	146
18	ABLG	ABL GAIN		4	4
19	AKBP	AKB PULSE HEIGHT		10	10
20	AALG	ANALOG ACL GAIN CONTROL		0	0
21	AALS	ANALOG ACL ON/OFF CONTROL		1	1
22	UVDT	UVIN DITHER TEST		14	14
23	YDT	Y DITHER LEVEL		00	00
24	HFFR	AFC1 FORCE FREERUN		0	0
25	HFUP	H FREERUN FREQUENCY UP(700Hz)		0	0
26	JSWW	Jump Pulse Width		0	0
27	XF0A	VCXO FREERUN ADJUST		0	0
28	BGST	BGP(for PLL) TIMING	RF&AV/ YUV	16 06	16 06
29	XPHA	VCXO PHASE ADJUST		10	10
30	HRMP	AFC2 TIME CONSTANT		3	3

Device "ASIC"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
31	RPLU	REF PLL TIME CONSTANT		3	3
32	RPLB	REF PLL TIME CONSTANT		1	1
33	XF0B	VCXO Fo ADJUST		0	0
34	RPLS	REF VCO FB LOOP SELECT		0	0
35	SSM	SyncSepaMasking CONTROL		0	0
36	VSAG	V-SAG prevent ON		0	0
37	AFC2	AFC2 GAIN CONTROL		0	0
38	XPLU	ACP TIME CONSTANT		01	01
39	AAPC	APC TIME CONSTANT BW SLOW		00	00
40	CDM2	V_LOGIC SW		1	1
41	MHDL	BGP SEL		1	1
42	HRPP	FRAMP RRAMP H OUT CONTROL RANGE		02	02
43	DSCK	DS DAC CLK SW for only Not YUV (YUV:"1"Fix)	Normal/16:9	00 00	00 00
44	VPW	V Pulse Wide		1	1
45	DTH	DITHER THRESHOLD LEVEL CONTROL at IIC AUTOD=ON		1	1
46	YOFF	Y OUTPUT MUTE		0	0
47	VSSW	SYNC SLICE LEVEL(V) Wide Window		0	0
48	AF2S	AFC2 timing SW		0	0
49	VSL2	Digital V_SYNC_LPF(fall)		1	1
50	VSL1	Digital V_SYNC_LPF(rise)		0	0
51	VSHE	V-SHRINK MODE for AV-NoSync		0	0
52	DSCS	CLOCK DIV SEL	RF&AV/ YUV	00 01	00 01
53	14HI	4fsc(Skew)CLK POLARITY		01	01
54	14HD	4fscCLK(Skew)CLK DELAY ADJUST		00	00
55	DSI	8fscCLK POLARITY		01	01
56	DSD	8fscCLK DELAY ADJUST		00	00
57	ADCD	ADC CLK DELAY ADJUST		00	00
58	WSTH	WEAK_SIGNAL VTH		00	00
59	WSVA	WEAK SIGNAL VIDEO ATT		00	00
60	WSCA	WEAK SIGNAL CHROMA ATT		00	00
61	VREF	AD REFERNCE SELECT(VZ)		00	00
62	DCCK	AD REFERNCE SELECT(VZ)	RF&AV/ YUV	12 00	12 00
63	OSDC	OSD COMP		00	00
64	HLM1	H/W AKB LIM1		04	04
65	HLM2	H/W AKB LIM2		12	12
66	HLM3	H/W AKB LIM3		21	21
67	HAD1	H/W AKB SPEED1		02	02
68	HAD2	H/W AKB SPEED2		06	06
69	HAKE	H/W AKB MANUAL (MCU)/HARD		01	01
70	HASP	H/W AKB SPEED		03	03
71	HERL	H/W AKB ERROR DET THRESH		10	10
72	HLMC	H/W AKB ERROR DET TIME		15	15
73	HPWL	H/W AKB POWER ON TRESH		04	04
74	HPWC	H/W AKB POWER ON TIME		02	02
75	HFMT	POWER ON H/W AKB2 HOLD TIMER(@100msec) [0 : No Hold]		20	20
76	SPMT	AKB POWER ON MUTE EXIT TIMER(@100msec)		120	120
77	Y16M	YUV 16M		01	01
78	PCLP	Pedestal Clamp		00	00

Device "AP1"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
1	VCOF	VOLUME OFFSET for RF	FA315/ FA515	248 / 246	244
2	RFLV	RF audio offset		250	250
3	AEOF	Effect off offset	FA315/ FA515	07 / 09	9
4	BBOL	Surround Off-BBE Low		00	00
5	BBOH	Surround Off-BBE High		00	00
6	BBGL	WOW Game BBE Low		00	00
7	BBGH	WOW Game BBE High		00	00

Device "AMOD" for "STD"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
1	64H	Equalizer band 64 Hz (Standard)		10	10
2	160H	Equalizer band 160 Hz (Standard)		10	10
3	400H	Equalizer band 400 Hz (Standard)		10	10
4	1KH	Equalizer band 1kHz (Standard)		10	10
5	25K	Equalizer band 2.5kHz (Standard)		10	10
6	63K	Equalizer band 6.3kHz (Standard)		10	10
7	16K	Equalizer band 16kHz (Standard)		10	10

Device "AMOD" for "GAME"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
1	64H	Equalizer band 64 Hz (Music)		15	15
2	160H	Equalizer band 160 Hz (Music)		13	13
3	400H	Equalizer band 400 Hz (Music)		12	12
4	1KH	Equalizer band 1kHz (Music)		10	10
5	25K	Equalizer band 2.5kHz (Music)		13	13
6	63K	Equalizer band 6.3kHz (Music)		15	15
7	16K	Equalizer band 16kHz (Music)		13	13

Device "AMOD" for "DYNAMIC"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
1	64H	Equalizer band 64 Hz (Drama)		15	15
2	160H	Equalizer band 160 Hz (Drama)		12	12
3	400H	Equalizer band 400 Hz (Drama)		10	10
4	1KH	Equalizer band 1kHz (Drama)		9	9
5	25K	Equalizer band 2.5kHz (Drama)		12	12
6	63K	Equalizer band 6.3kHz (Drama)		16	16
7	16K	Equalizer band 16kHz (Drama)		17	17

Device "AMOD" for "SPEECH"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
1	64H	Equalizer band 64 Hz (Action)		10	10
2	160H	Equalizer band 160 Hz (Action)		10	10
3	400H	Equalizer band 400 Hz (Action)		12	12
4	1KH	Equalizer band 1kHz (Action)		13	13
5	25K	Equalizer band 2.5kHz (Action)		14	14
6	63K	Equalizer band 6.3kHz (Action)		13	13
7	16K	Equalizer band 16kHz (Action)		11	11

Device "DSP"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
1	MUSM	DSP [30h] (238C)<15:13>		06	06
2	CWDT	DSP [30h] (238D)<2:0>		03	03
3	DIMC	DSP [30h] (238E)<2:0>		03	02
4	CSET	DSP [30h] (238F)<1:0>		00	00
5	BMF	DSP [30h] (231B)<22:22>		01	01
6	BMR	DSP [30h] (231D)<22:22>		01	01
7	XOVF	DSP device coefficient data from 80Hz to 200Hz		04	05
8	MDLY	DSP Delay for Effect Dolby Pro Logic Movie		05	05
9	GDLY	DSP Delay for Effect Dolby Pro Logic Matrix/Music		05	05

Device "Microprocessor"

Item#	OSD	DETAIL	note	Initial Data (DEC) 29FA	Initial Data (DEC) 21FA
1	DISP	OSD horizontal position		88	88
2	MEDP	CCD horizontal position		110	110
3	HRLW	Low limit of H-pulse counting window (RF)		16	16
4	HRHG	High limit of H-pulse counting wondow (RF)		64	64
5	HSDT	H-pulse Detection(S-Video)		08	08
6	STPI	Gradual CONTRAST Increase Starting level		40	40
7	RAPI	Gradual CONTRAST Increase Vsync counter		10	10
8	ZD60	Zero Cross Relay Delay for AC 60Hz		60	60
9	ZD50	Zero Cross Relay Delay for AC 50Hz		40	40
9	ABLT	ABL protection counter		03	03
10	OSLR	R OSD level		27	27
11	OSLG	G OSD level		27	27
12	OSLB	B OSD level		27	27

4-5. ID MAP TABLE

Note: The Device name for ID Map group is "Feature"

Model	Dstination	ID 0	ID 1	ID 2	ID 3	ID 4	ID 5	ID 6	ID 7
KV- 21FA315	Latin North Latin South	81	15	71	128	168	18	32	97
KV-29FA315		81	15	71	128	168	16	32	97
KV-21FA515		81	15	79	128	168	19	32	97
KV-29FA515		81	15	79	128	168	17	32	97

4-6. WHITE BALANCE ADJUSTMENTS

1. Input an entire white signal with burst.
2. Access Service Adjustment Mode.
3. Set the PICTURE and BRIGHTNESS to minimum.
4. Adjust with SBRT if necessary.
5. Press 2 or 5 to select the VP1 device.
6. Press 1 or 4 to display the GCUT OSD item.
7. Press 3 or 6 to adjust for the best white balance.
8. Press 1 or 4 to display the BCUT OSD item.
9. Press 3 or 6 to adjust for the best white balance.
10. Set the PICTURE and BRIGHTNESS to maximum.
11. Press 1 or 4 to display the GDRV OSD item.
12. Press 3 or 6 to adjust for the best white balance.
13. Press 1 or 4 to display the BDRV OSD item.
14. Press 3 or 6 to adjust for the best white balance.
15. Press MUTING then ENTER to save into the memory.

4-7. A BOARD ADJUSTMENTS

H. Frequency (Free Run) Check

1. Input a TV mode (RF) with no signal.
2. Connect a frequency counter to base of Q501 (TP-25 H. DRIVE) on the A Board.
3. Check H. Frequency for 15735 ± 200 Hz.

V. Frequency (Free Run) Check

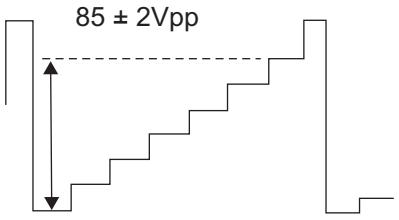
1. Select video 1 with no signal input.
2. Set the conditions for a standard setting.
3. Connect the frequency counter to TP-27 (V OUT) or CN501 pin ⑥ (V DY+) and ground on the A Board .
4. Check that V. Frequency shows 60 ± 4 Hz.

Drive (SCON)

1. Input a color-bar signal and set the level to 75%.
2. Set in Pro mode + PICTURE MAX.
3. Access Service Adjustment Mode.
4. Press 2 or 5 to select the VP1 device.
5. Press 1 or 4 to display the GON OSD item.
6. Press 3 or 6 to adjust to 0.
7. Press 1 or 4 to display the BON OSD item.
8. Press 3 or 6 to adjust to 0.
   Note: Leave RON set to “1”.

R ON:	ON	(1)
G ON:	OFF	(0)
B ON:	OFF	(0)

9. Connect an oscilloscope probe to C Board, CN705 pin3 (KR).
10. Press 1 or 4 to display the SCON OSD item.
11. Press 3 or 6 to adjust the value of SCON to 85 ± 2Vpp.



12. Repeat steps 5 thru 8 to reset GON and BON values to “1”.

R ON:	ON	(1)
G ON:	ON	(1)
B ON:	ON	(1)

13. Press MUTING then ENTER to write into memory.

Display Position Adjustment (DISP)

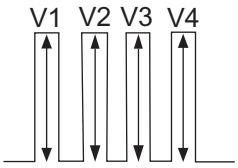
1. Input a color-bar signal.
2. Access Service Adjustment Mode.
3. Press 2 or 5 to select the Microprocessor device.
4. Press 1 or 4 to display the DISP OSD item.
5. Press 3 or 6 to adjust characters to the center.
6. Press MUTING then ENTER to write into memory.
7. Check to see if the text is displayed on the screen.

Sub Bright Adjustment (SBRT)

1. Input a monoscope signal.
2. Access Service Adjustment Mode.
3. Set the PICTURE and BRIGHTNESS to minimum.
4. Press 2 or 5 to select the VP1 device.
5. Press 1 or 4 to display the SBRT OSD item.
6. Press 3 or 6 to obtain a faintly visible 20 IRE mark, after that increase +3 steps.
7. Press MUTING then ENTER to write into memory.

Sub Hue, Sub Color Adjustment (SHUE, SCOL)

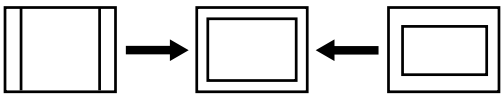
1. Input color-bar signal at 75%.
2. Access Service Adjustment Mode.
3. Set (PIC) to Max and (COL) to 50%.
4. Connect an oscilloscope probe to C Board, CN705 pin ④ (Blue Out).
5. Press 2 or 5 to select the VP1 device.
6. Press 1 or 4 to display the SHUE or SCOL OSD item.
7. While showing the SHUE OSD item, adjust the waveform by pressing 3 or 6 until the second and third bars show the same level (V2 = V3 < 0.15Vp-p). Set Sub Hue -2 Step.
8. While showing the SCOL OSD item, adjust the waveform by pressing 3 or 6 until the first and fourth bars show the same level (V1 = V4 < 0.15Vp-p). Set Sub Col + 2 Step.



9. Press MUTING then ENTER to write into memory.

V. Size Adjustment (VSIZ)

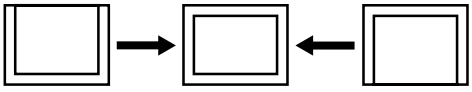
1. Input a crosshatch signal.
2. Access Service Adjustment Mode.
3. Press 2 or 5 to select the DEF device.
4. Press 1 or 4 to display the VSIZ OSD item.
5. Adjust value of VSIZ by pressing 3 or 6 for the best vertical size.
6. Press MUTING then ENTER to write into memory.



V. Center Adjustment (VPOS)

Perform this adjustment after performing H. Frequency (Free Run) Check.

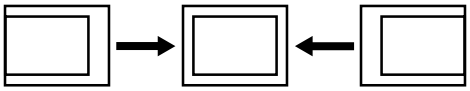
1. Input a crosshatch signal.
2. Access Service Adjustment Mode.
3. Press 2 or 5 to select the DEF device.
4. Press 1 or 4 to display the VPOS OSD item.
5. Adjust value of VPOS by pressing 3 or 6 for the best vertical center.
6. Press MUTING then ENTER to write into memory.



H. Center Adjustment (HPOS)

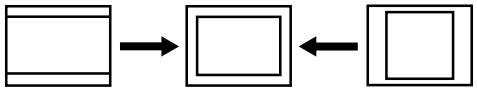
Perform this adjustment after performing H. Frequency (Free Run) Check.

1. Input a crosshatch signal.
2. Access Service Adjustment Mode.
3. Press 2 or 5 to select the DEF device.
4. Press 1 or 4 to display the HPOS OSD item.
5. Adjust the value of HPOS by pressing 3 or 6 for the best horizontal center.
6. Press MUTING then ENTER to write into memory.



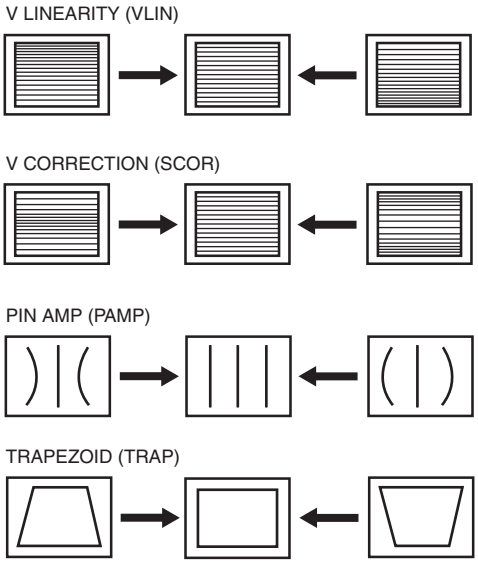
H. Size Adjustment (HSIZ)

1. Input a monoscope signal.
2. Access Service Adjustment Mode.
3. Press 2 or 5 to select the DEF device.
4. Press 1 or 4 to display the HSIZ OSD item.
5. Adjust value of HSIZ by pressing 3 or 6 for the best horizontal size.
6. Press MUTING then ENTER to write into memory.



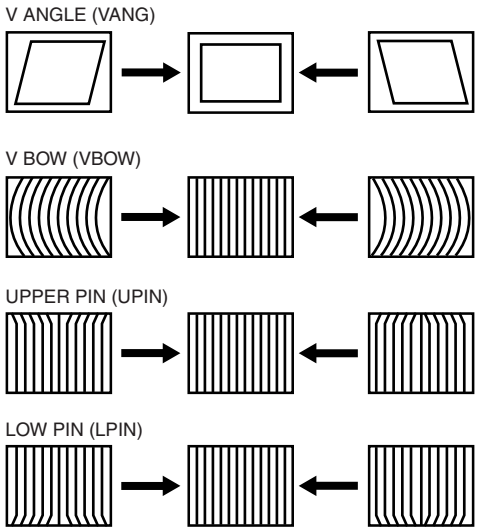
V. Linearity (VLIN), V. Correction (SCOR), PIN Amp (PAMP), and Trapezoid (TRAP) Adjustments

1. Input a crosshatch signal.
2. Access Service Adjustment Mode.
3. Press 2 or 5 to select the DEF device.
4. Press 1 or 4 to display the VLIN OSD item.
5. Adjust the value of VLIN by pressing 3 or 6 for the best horizontal size.
6. Repeat steps 4 and 5 for SCOR, PAMP, and TRAP.
7. Press MUTING then ENTER to write into memory.



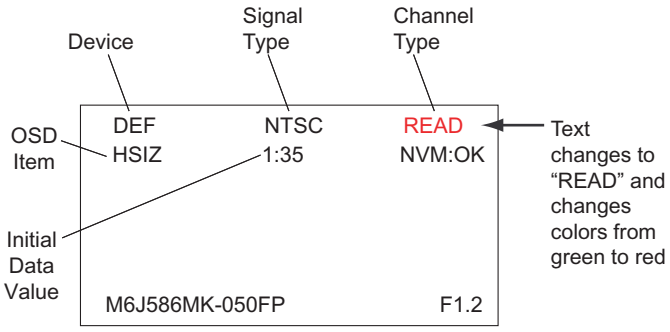
V. Angle (VANG), V. Bow (VBOW), Upper PIN (UPIN) and Low PIN (LPIN) Adjustments

1. Input a crosshatch signal.
2. Access Service Adjustment Mode.
3. Press 2 or 5 to select the DEF device.
4. Press 1 or 4 to display the VANG OSD item.
5. Adjust the value of VANG by pressing 3 or 6 for the best picture.
6. Repeat steps 4 and 5 for VBOW, UPIN, and LPIN.
7. Press MUTING then ENTER to write into memory.



Reading Adjustments to Memory

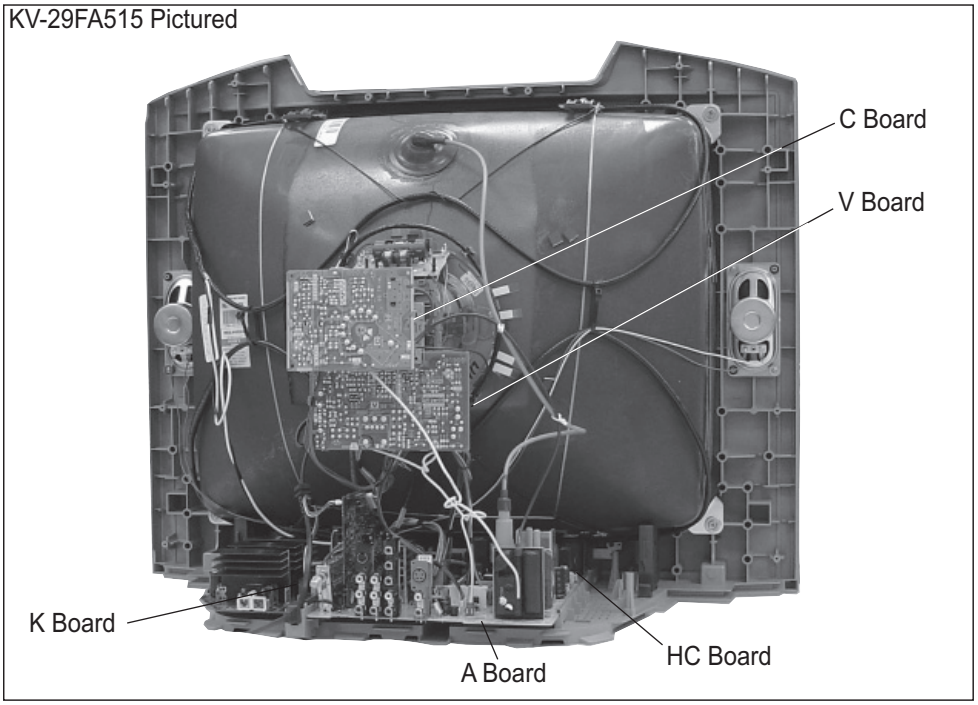
1. After completing all adjustments, 0 then ENTER to read into memory.



SECTION 5: DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION

KV-29FA515 Pictured



The components identified by shading and ⚠ symbol are critical for safety. Replace only with part number specified.

The symbol indicates a fast operating fuse and is displayed on the component side of the board. Replace only with fuse of the same rating as marked.

All voltages are in V.

S : Measurement impossibillity.

: B-line.

(Actual measured value may be different).

: signal path. (RF)

Circled numbers are waveform references.

The components identified by ⋈ in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be necessary, replace only with the value originally used.

When replacing components identified by ◪, make the necessary adjustments as indicated. If the results do not meet the specified value, change the component identified by ⋈ and repeat the adjustment until the specified value is achieved.

(Refer to Section 3: Safety Related Adjustments on Page 36.)

5-2. PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM INFORMATION

All capacitors are in µF unless otherwise noted. pF : µµF 50WV or less are not indicated except for electrolytics and tantalums.

All electrolytics are in 50V unless otherwise specified.

All resistors are in ohms. k=1000, M=1000k

Indication of resistance, which does not have one for rating electrical power, is as follows: Pitch : 5mm Rating electrical power :

$^1/_4$ W in resistance, $^1/_{10}$ W and $^1/_8$ W in chip resistance.

: nonflammable resistor.

: fusible resistor.

△ : internal component.

: panel designation and adjustment for repair.

⊥ : earth ground

⏚ : earth-chassis

All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

Readings are taken with a color-bar signal input.

Readings are taken with a 10M digital multimeter.

Voltages are DC with respect to ground unless otherwise noted.

Voltage variations may be noted due to normal production tolerances.

When replacing the parts listed in the table below, it is important to perform the related adjustments.

Part Replaced (◪)	Adjustment (⋈)
C531, C532, D519, D520, D521, IC501, IC600, PH602, R529, R530, R531, R532, R533, R550, T503 (FBT), T504 (DFT)	HV HOLD-DOWN R530, R531

REFERENCE INFORMATION

RESISTOR

: RN	METAL FILM
: RC	SOLID
: FPRD	NONFLAMMABLE CARBON
: FUSE	NONFLAMMABLE FUSIBLE
: RW	NONFLAMMABLE WIREWOUND
: RS	NONFLAMMABLE METAL OXIDE
: RB	NONFLAMMABLE CEMENT
: ※	ADJUSTMENT RESISTOR

COIL

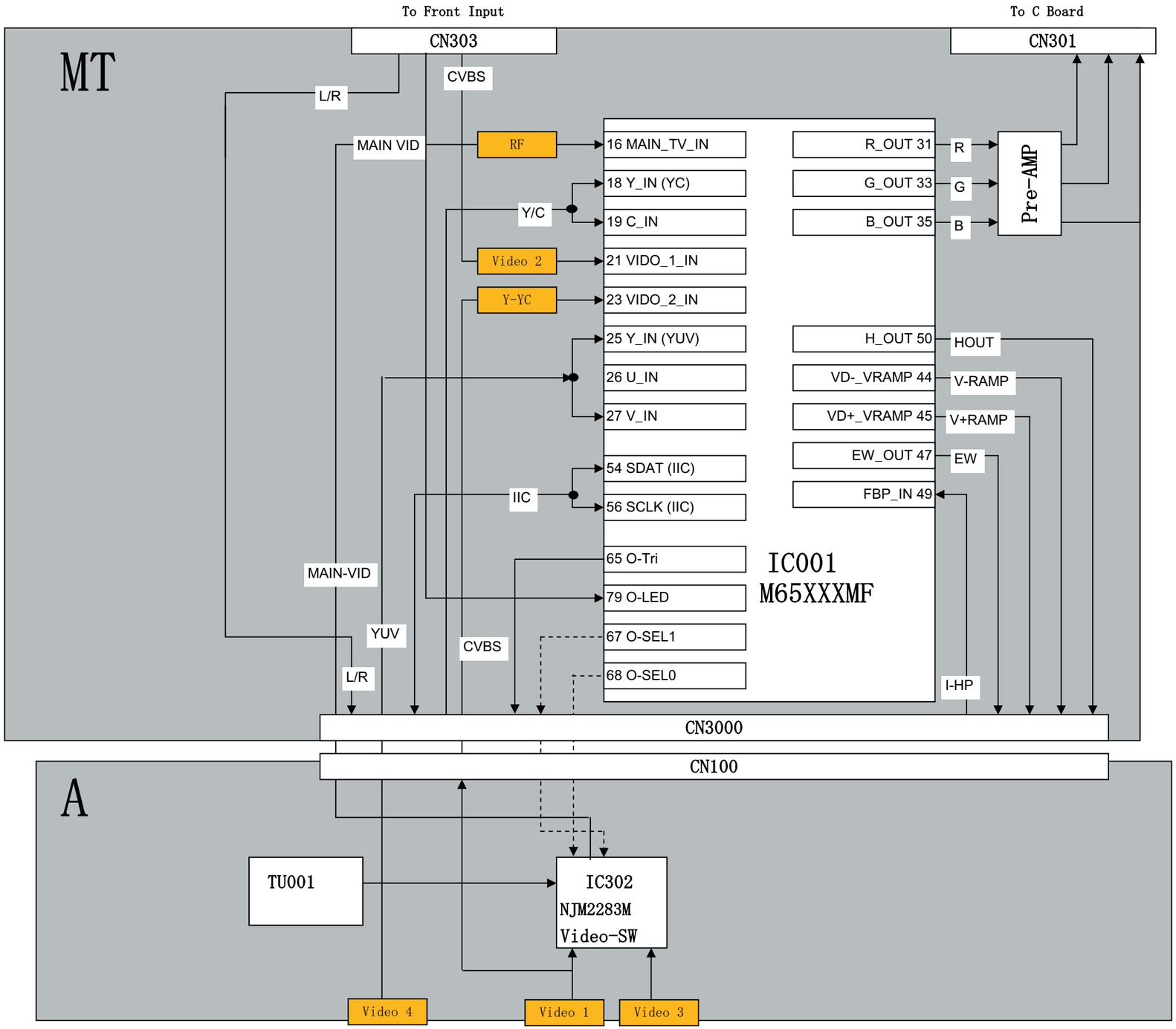
: LF-8L	MICRO INDUCTOR

CAPACITOR

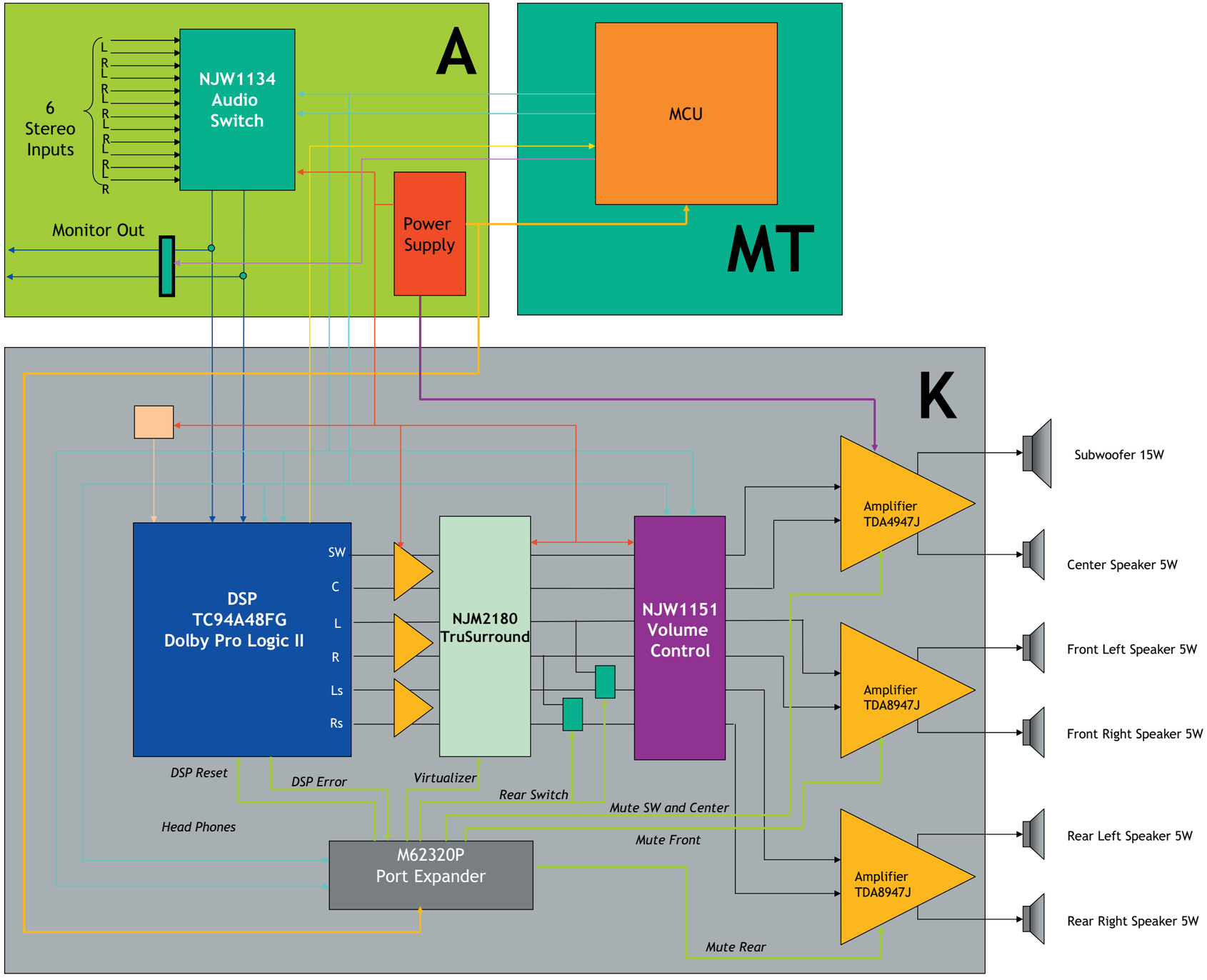
: TA	TANTALUM
: PS	STYROL
: PP	POLYPROPYLENE
: PT	MYLAR
: MPS	METALIZED POLYESTER
: MPP	METALIZED POLYPROPYLENE
: ALB	BIPOLAR
: ALT	HIGH TEMPERATURE
: ALR	HIGH RIPPLE

5-3. BLOCK DIAGRAMS AND SCHEMATICS

SIGNAL FLOW BLOCK DIAGRAM

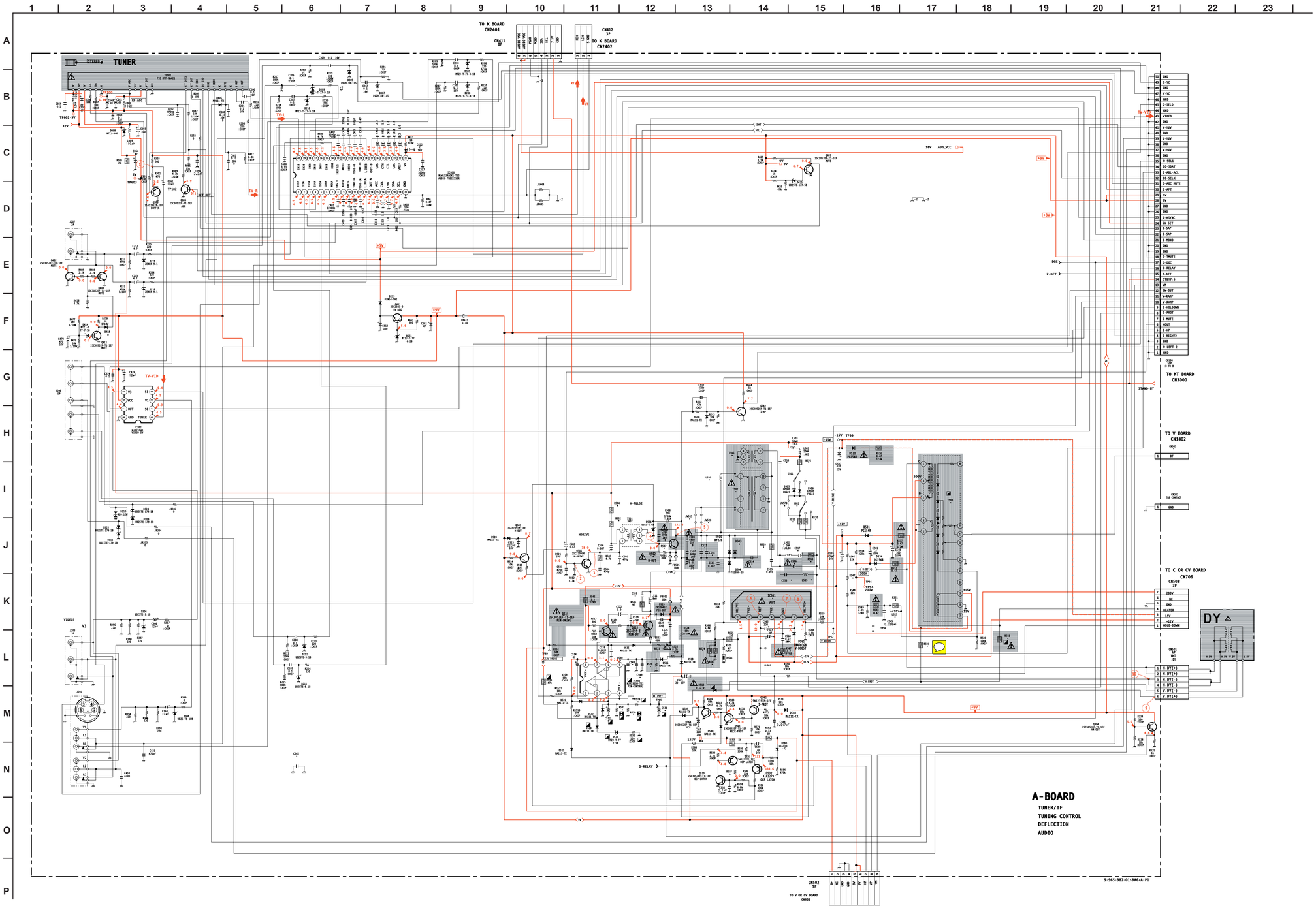


AUDIO BLOCK DIAGRAM

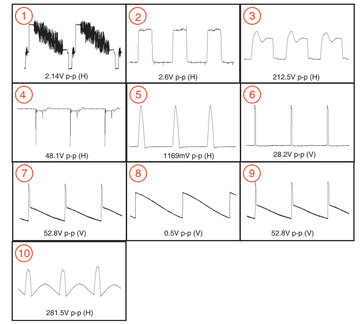


HC

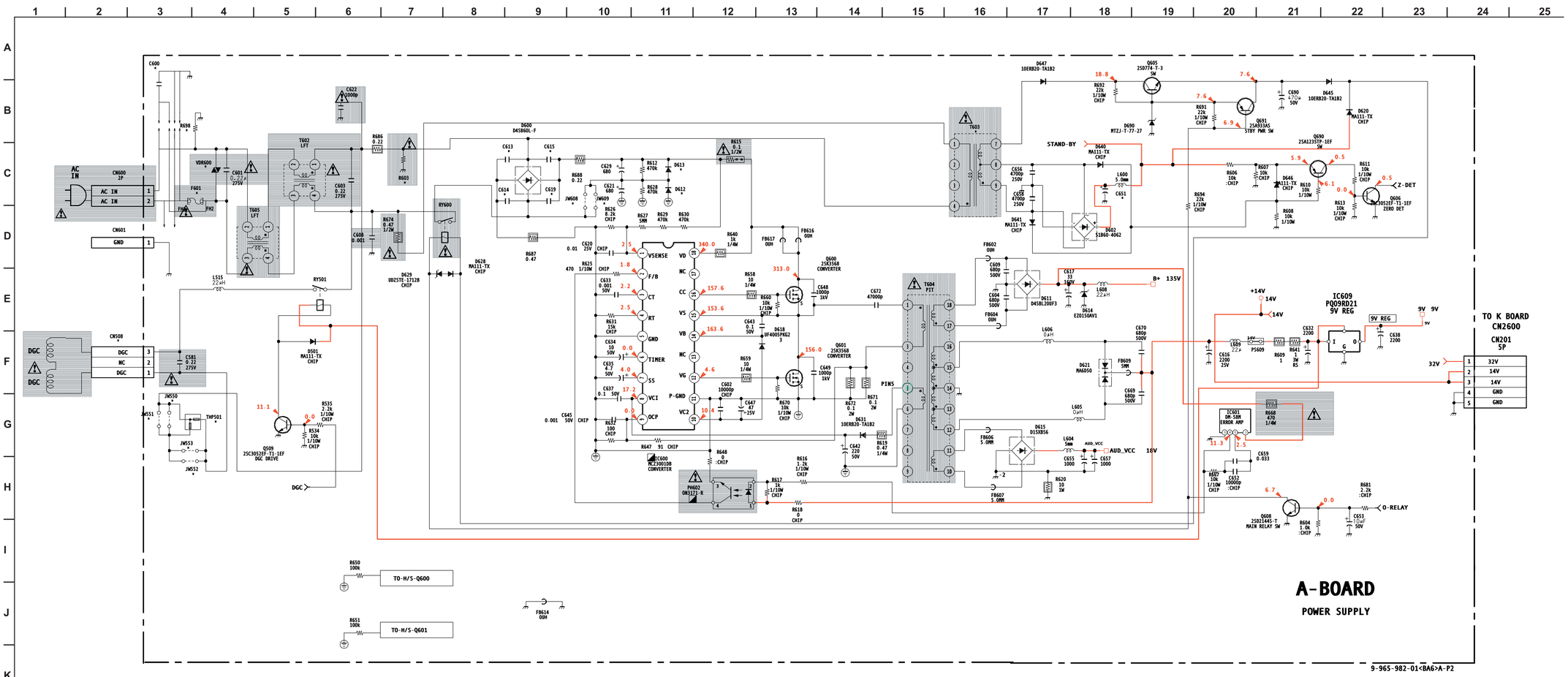
A BOARD SCHEMATIC DIAGRAM (1 OF 2)



A BOARD WAVEFORMS

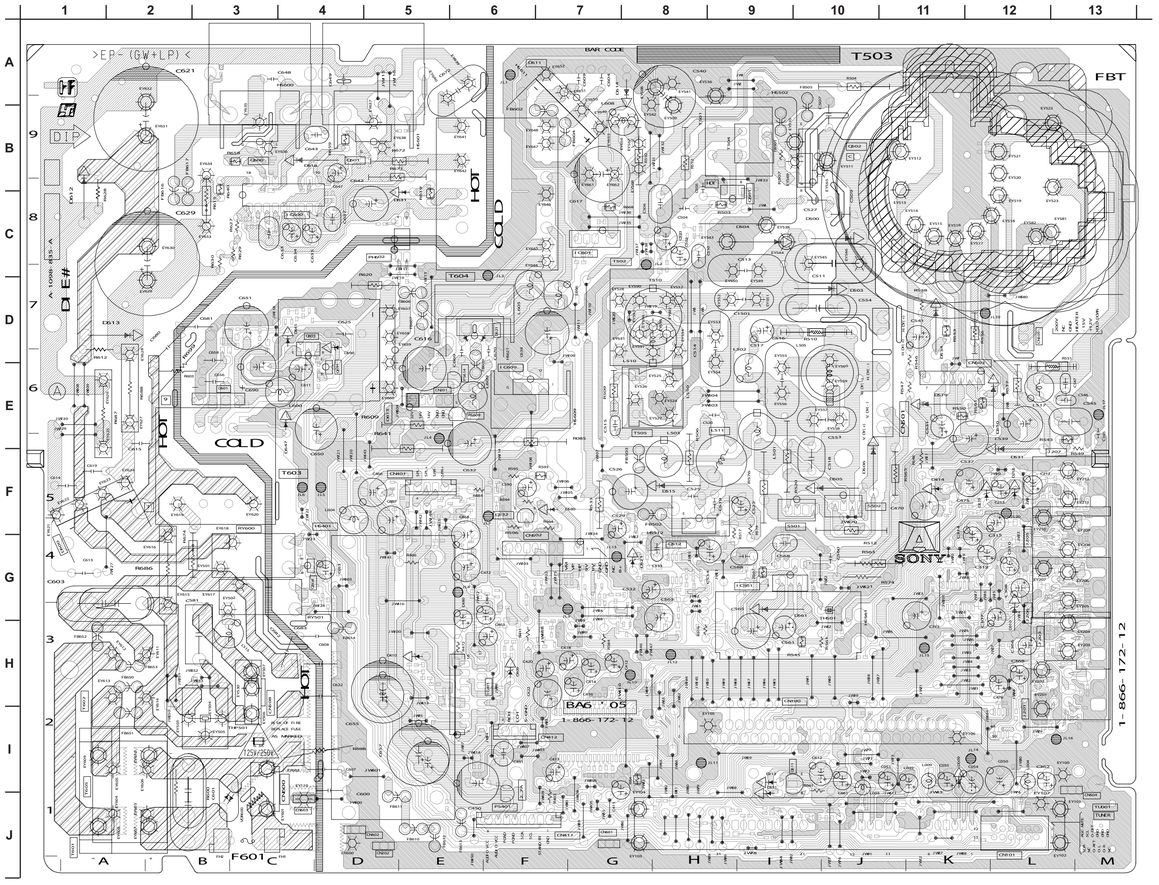


A BOARD SCHEMATIC DIAGRAM (2 OF 2)



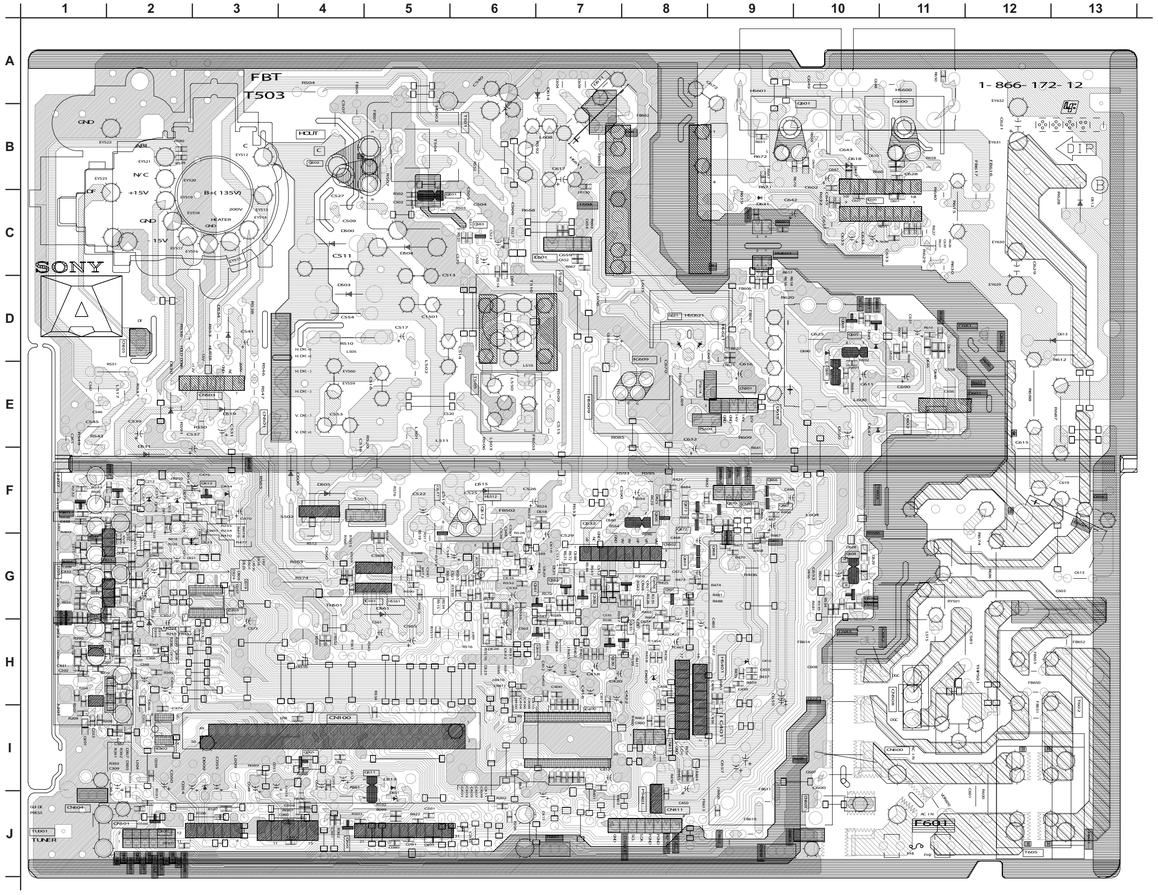
A [TUNER/IF, TUNING CONTROL, DEFLECTION, AUDIO, POWER SUPPLY]

COMPONENT SIDE



A [TUNER/IF, TUNING CONTROL, DEFLECTION, AUDIO, POWER SUPPLY]

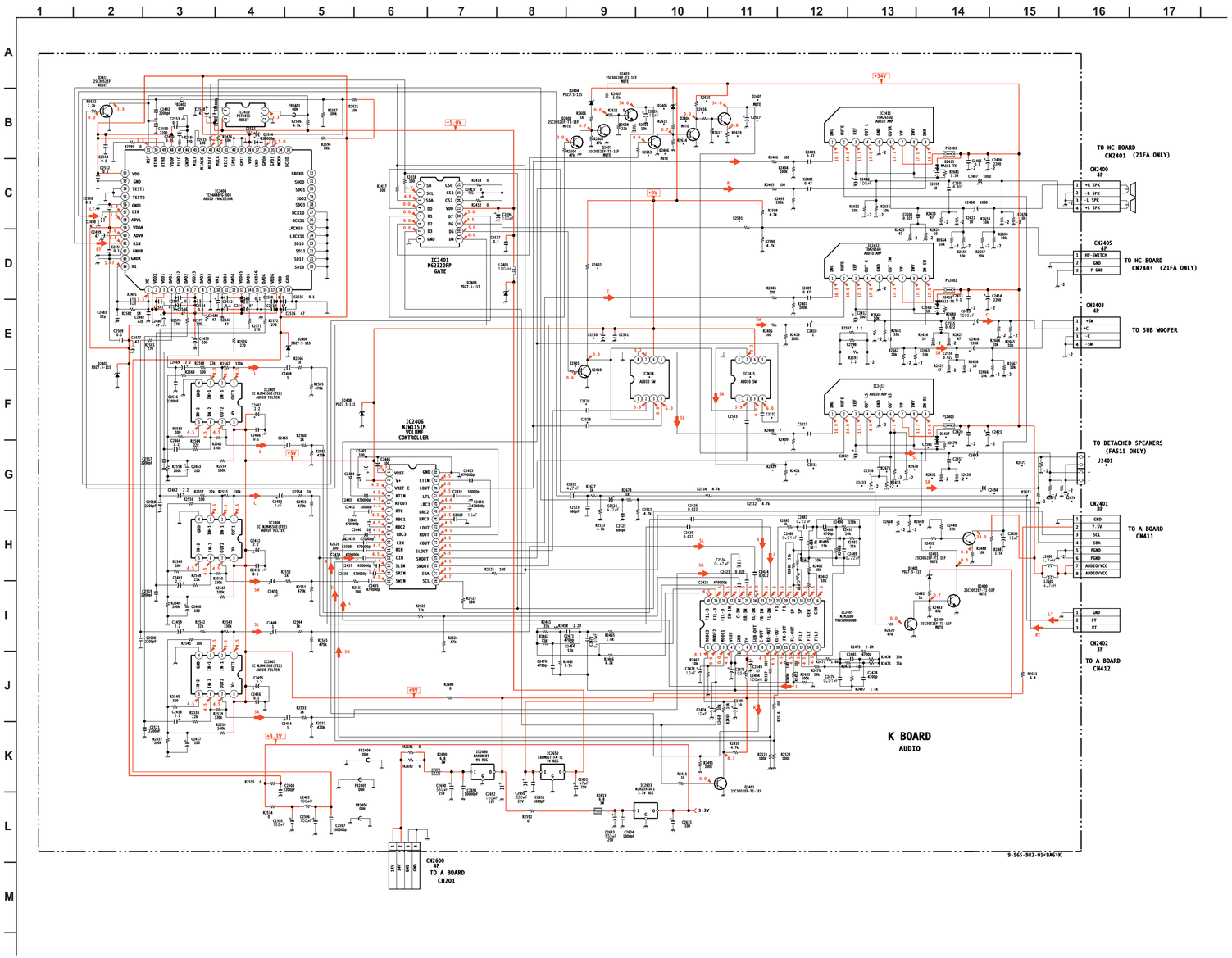
CONDUCTOR SIDE



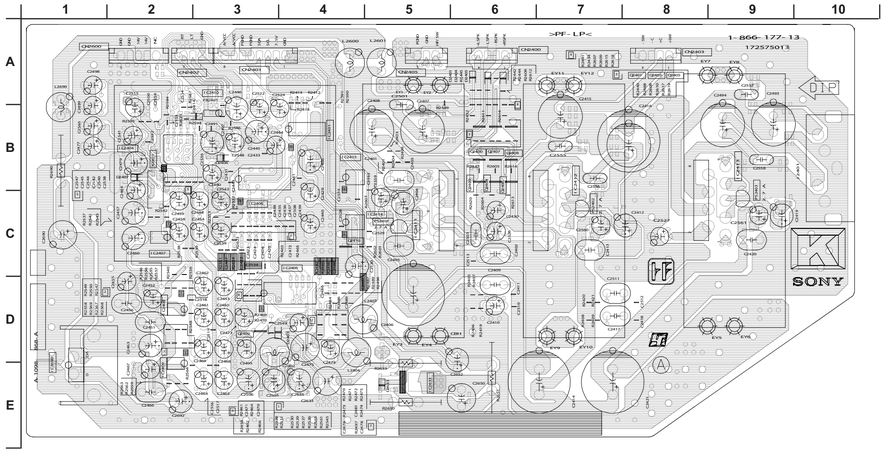
A BOARD LOCATOR LIST
CONDUCTOR SIDE

DIODE		DIODE		DIODE		DIODE		IC		TRANSISTOR	
D009	I-3	D402	G-2	D522	H-6	D615	E-9	IC302	I-2	Q511	F-5
D200	H-1	D405	J-5	D525	H-6	D618	B-10	IC400	I-7	Q512	F-6
D201	I-1	D414	F-3	D526	H-6	D620	D-11	IC501	G-6	Q530	H-7
D209	H-2	D418	F-2	D530	E-2	D621	D-8	IC561	G-5	Q531	G-8
D210	H-2	D425	F-8	D531	E-2	D628	F-10	IC600	C-10	Q532	F-7
D211	H-2	D500	C-4	D534	D-3	D629	G-10	IC601	C-7	Q561	G-6
D212	G-2	D501	G-10	D535	G-6	D631	C-9	IC609	D-8	Q562	G-7
D213	I-5	D503	D-4	D551	G-8	D640	D-11	TRANSISTOR		Q564	G-6
D218	F-2	D504	C-5	D561	G-5	D641	D-11	Q005	I-4	Q582	G-7
D219	F-2	D505	F-4	D580	F-7	D645	D-10	Q300	J-4	Q583	C-6
D305	I-2	D506	F-4	D588	G-7	D646	D-11	Q304	G-8	Q600	A-11
D306	H-2	D508	G-8	D589	H-6	D647	E-10	Q402	F-2	Q601	A-10
D307	I-2	D509	D-6	D590	G-7	D651	I-5	Q403	F-1	Q605	D-10
D308	H-2	D515	F-6	D600	F-12	D690	D-10	Q405	F-8	Q606	D-10
D309	G-3	D516	G-7	D602	E-11			Q412	F-3	Q608	G-10
D310	G-2	D518	F-7	D611	A-7			Q466	F-9	Q611	I-5
D311	G-2	D519	E-3	D612	B-13			Q501	B-6	Q690	D-10
D324	G-3	D520	G-7	D613	D-13			Q502	B-4	Q691	D-10
D325	G-3	D521	G-7	D614	A-7			Q509	G-10		

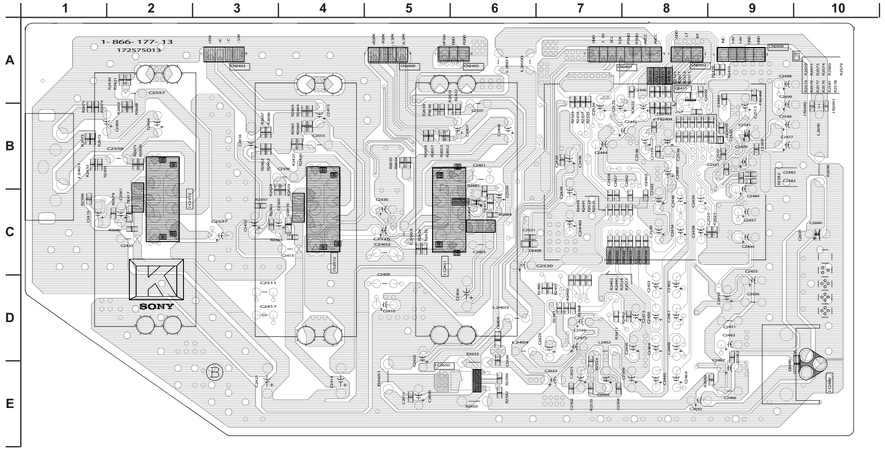
K BOARD SCHEMATIC DIAGRAM



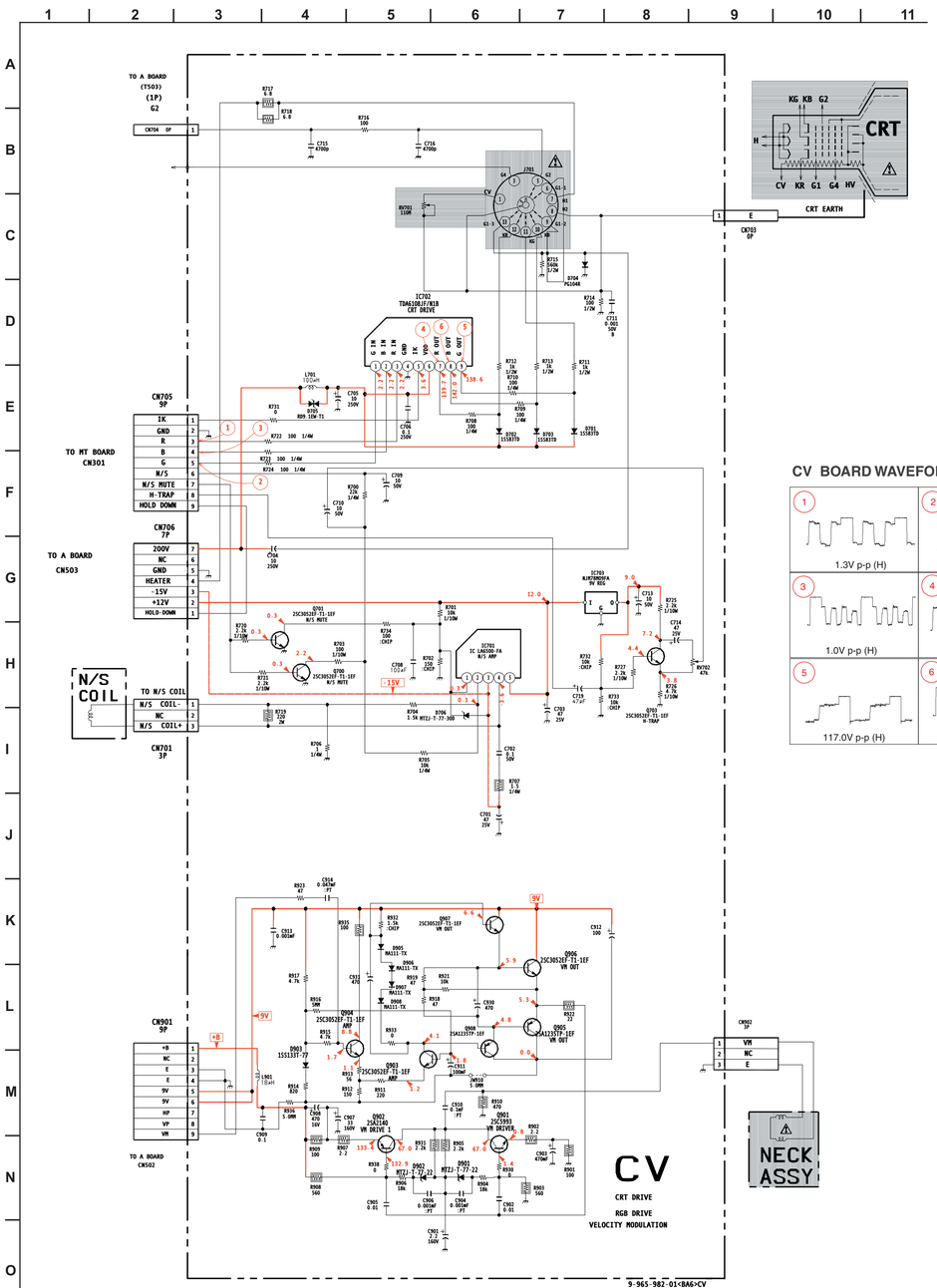
K [AUDIO] COMPONENT SIDE



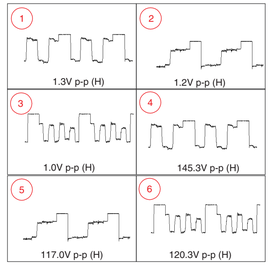
K [AUDIO] CONDUCTOR SIDE



CV BOARD SCHEMATIC DIAGRAM (KV-21FA315/21FA515 ONLY)

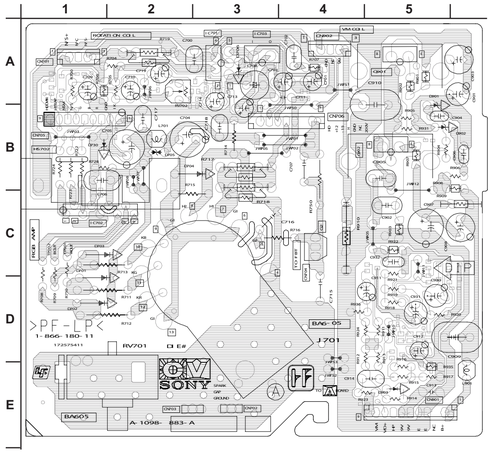


CV BOARD WAVEFORMS



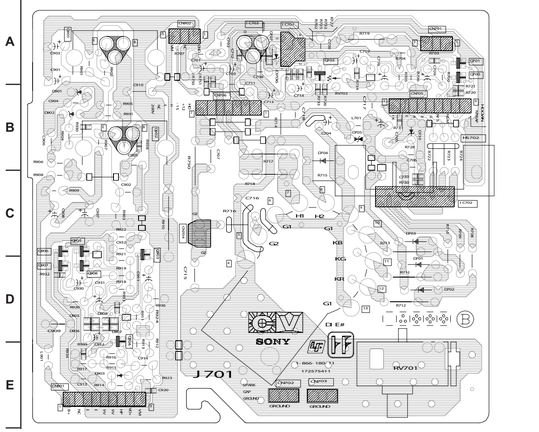
CV [CRT DRIVE, RBG DRIVE, VELOCITY MODULATION]

COMPONENT SIDE

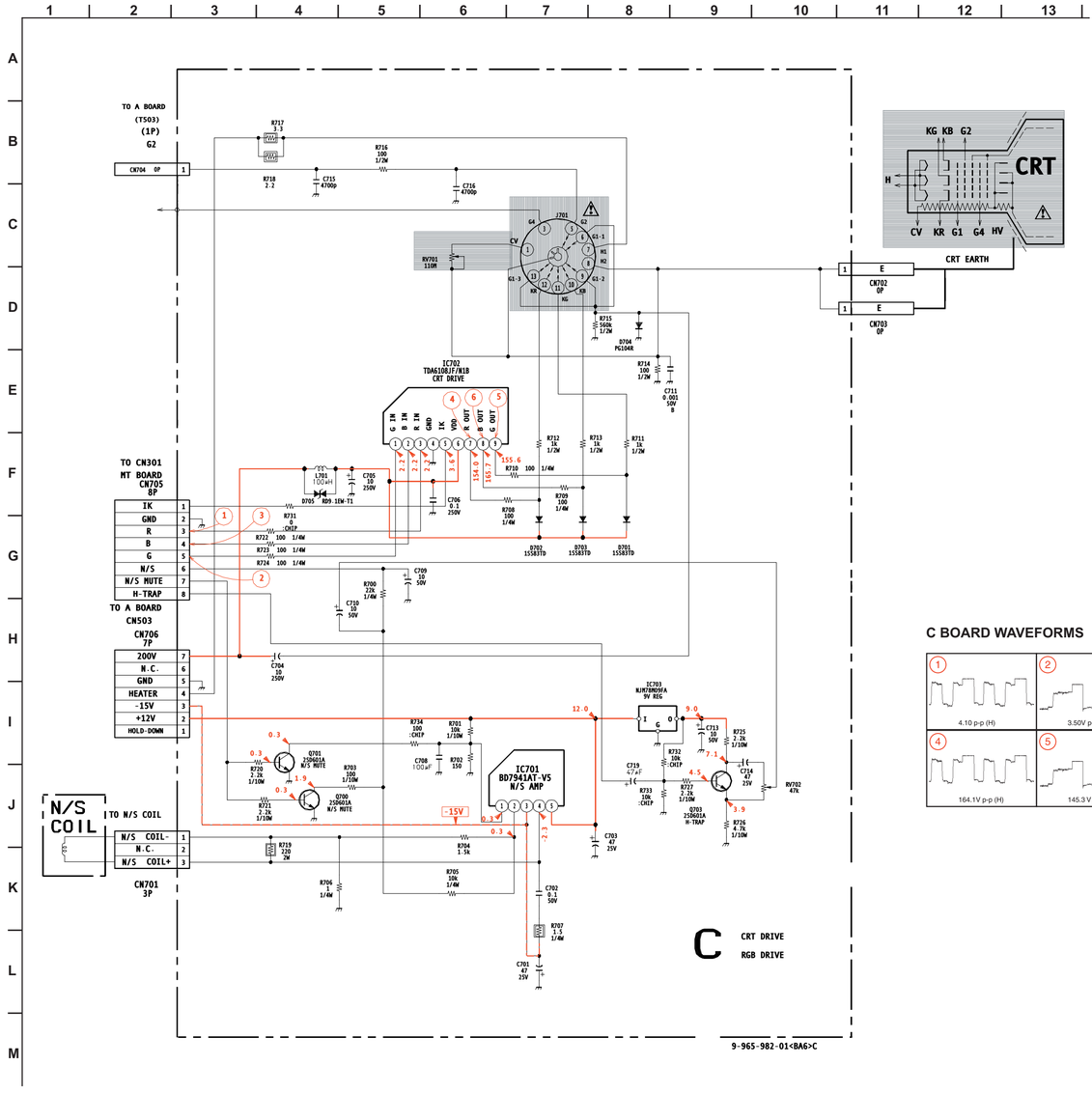


CV [CRT DRIVE, RBG DRIVE, VELOCITY MODULATION]

CONDUCTOR SIDE



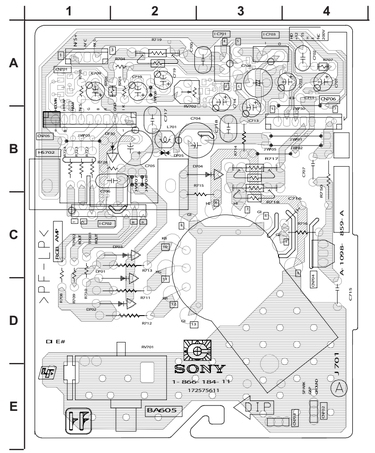
C BOARD SCHEMATIC DIAGRAM (KV-29FA315/29FA515 ONLY)



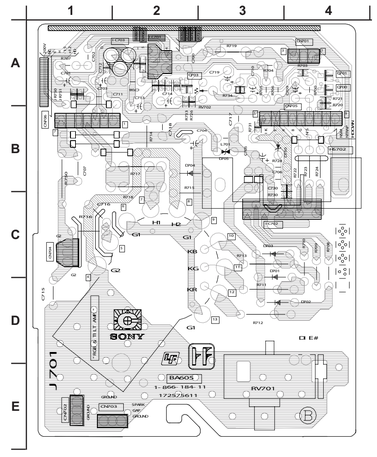
C BOARD WAVEFORMS

① 4.10 p-p (H)	② 3.50V p-p (H)	③ 3.50V p-p (H)
④ 164.1V p-p (H)	⑤ 145.3 V p-p (H)	⑥ 134.4V p-p (H)

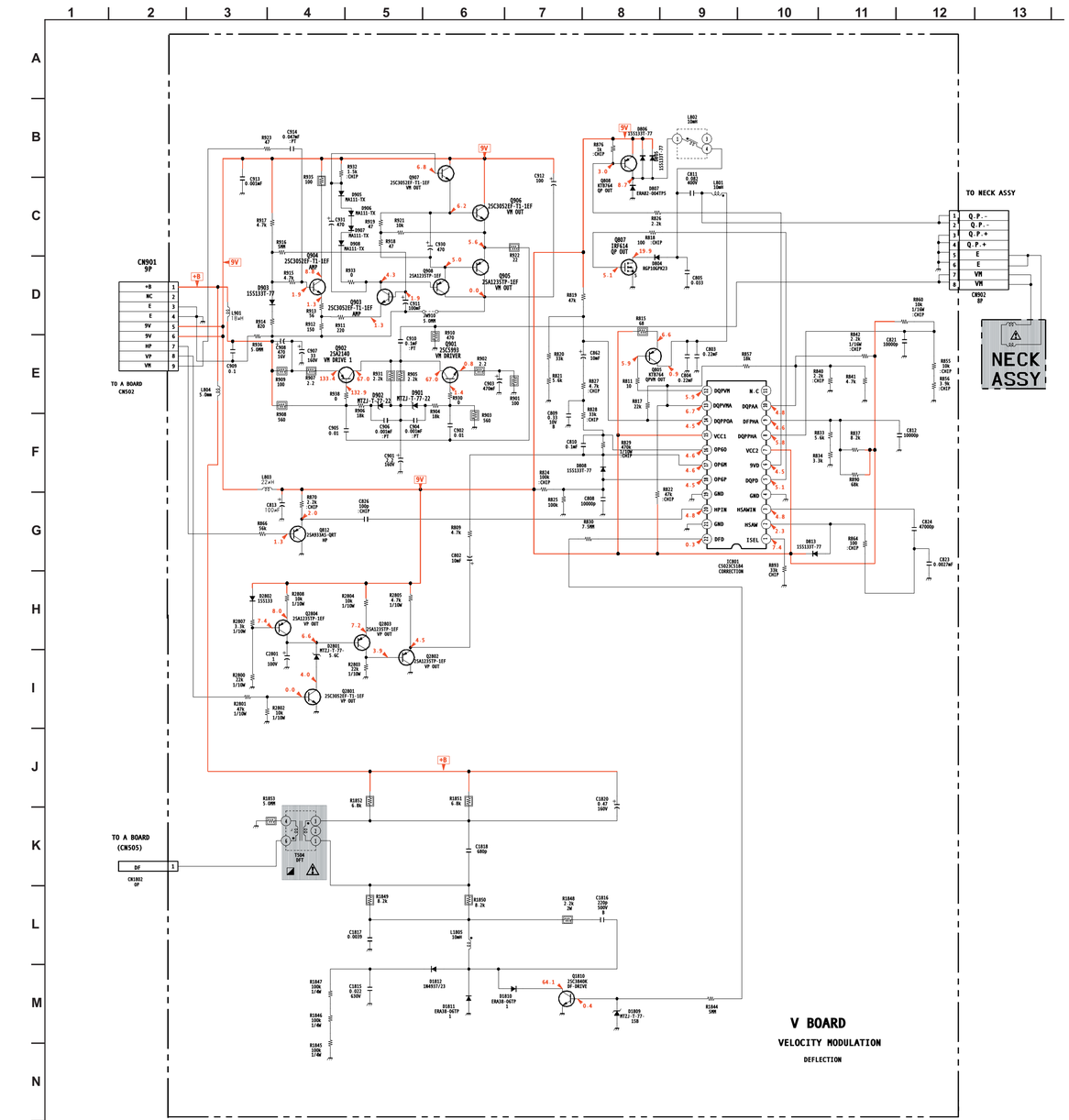
C [CRT DRIVE, RGB DRIVE]
COMPONENT SIDE



C [CRT DRIVE, RGB DRIVE]
CONDUCTOR SIDE

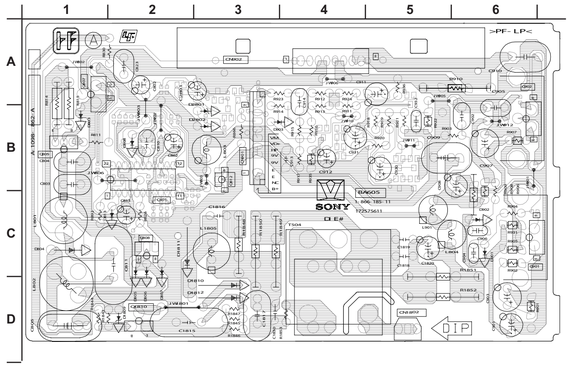


V BOARD SCHEMATIC DIAGRAM (KV-29FA315/29FA515 ONLY)



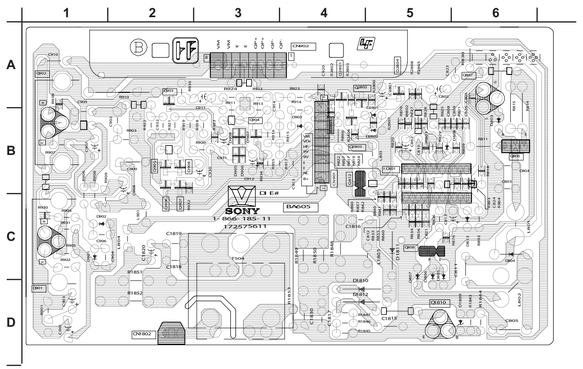
V [VELOCITY MODULATION, DEFLECTION]

COMPONENT SIDE

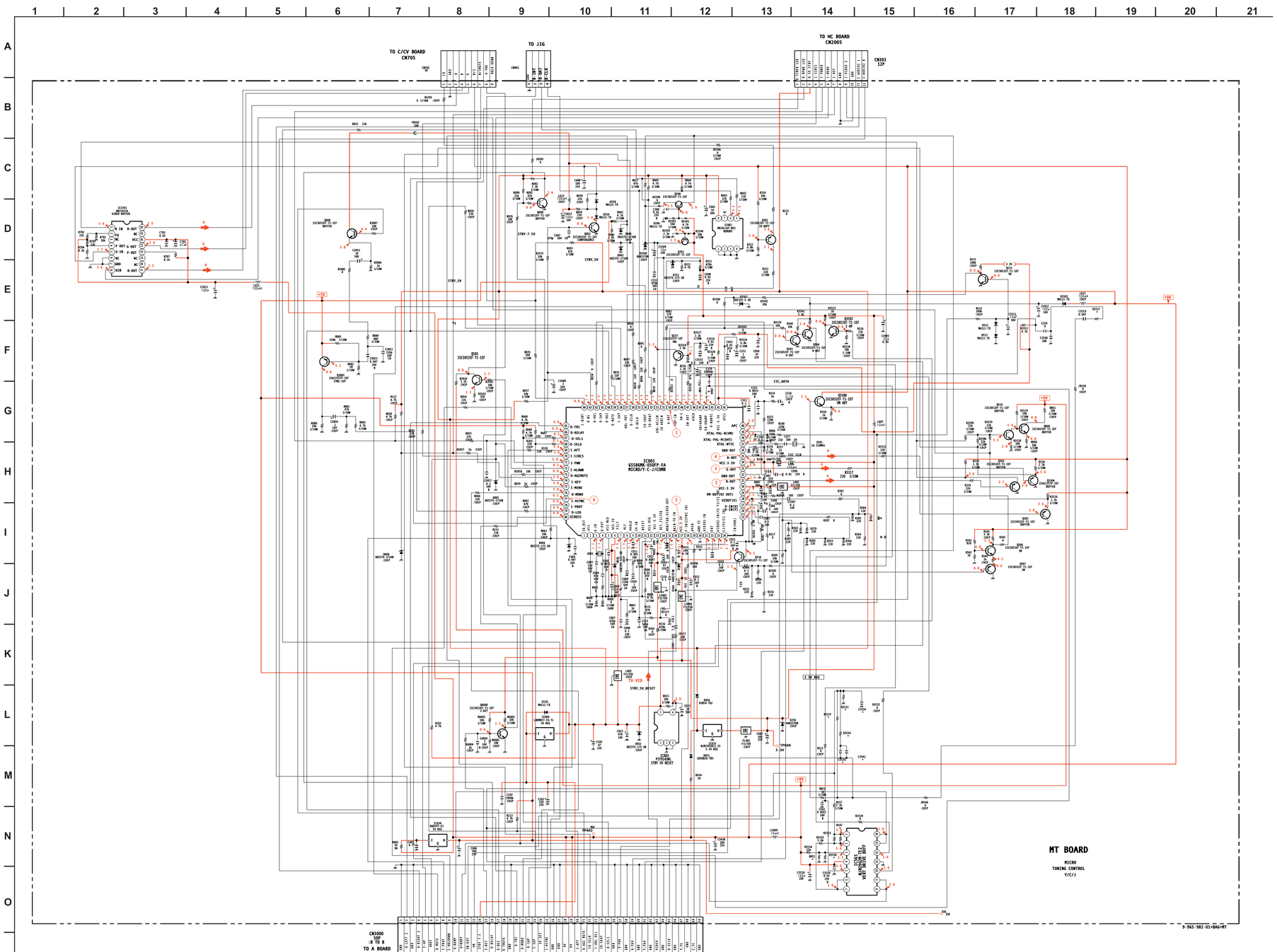


V [VELOCITY MODULATION, DEFLECTION]

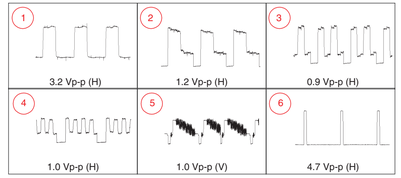
CONDUCTOR SIDE



MT BOARD SCHEMATIC DIAGRAM

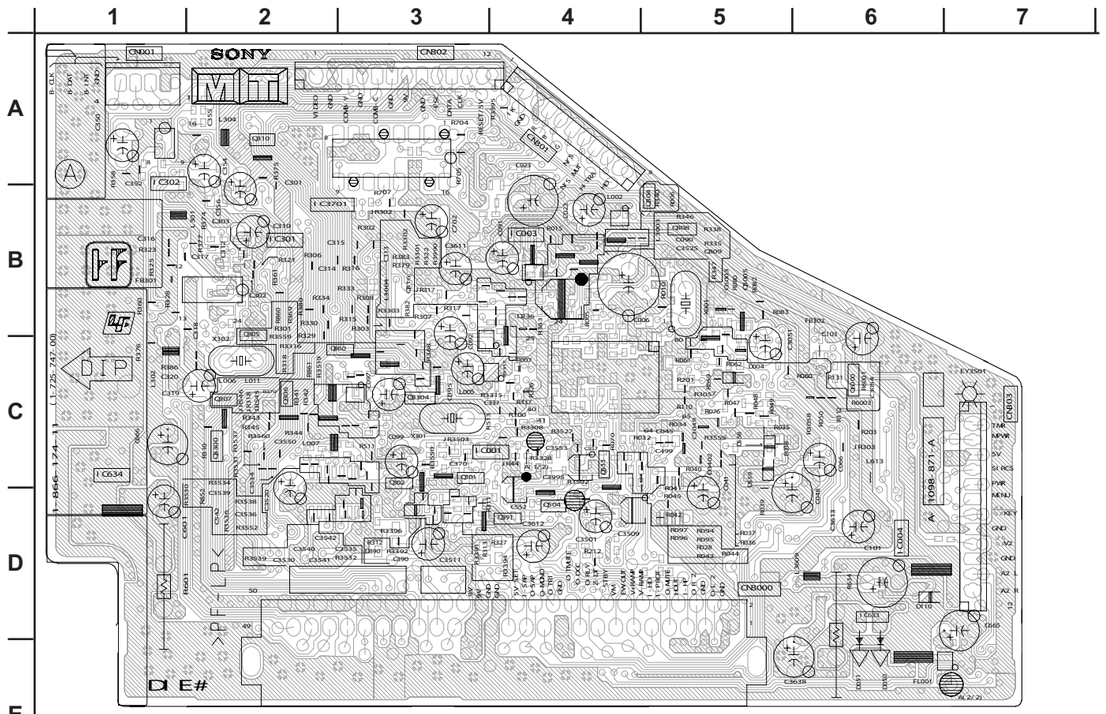


MT BOARD WAVEFORMS



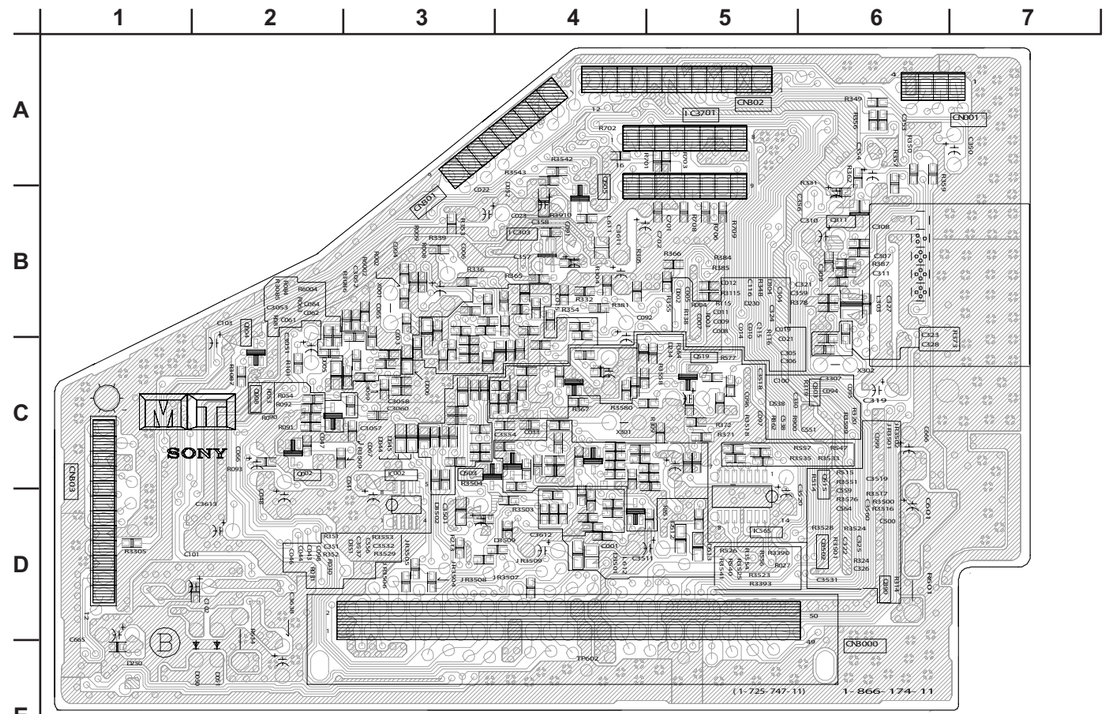
MT [MICRO TUNING CONTROL, Y/C/J]

COMPONENT SIDE



MT [MICRO TUNING CONTROL, Y/C/J]

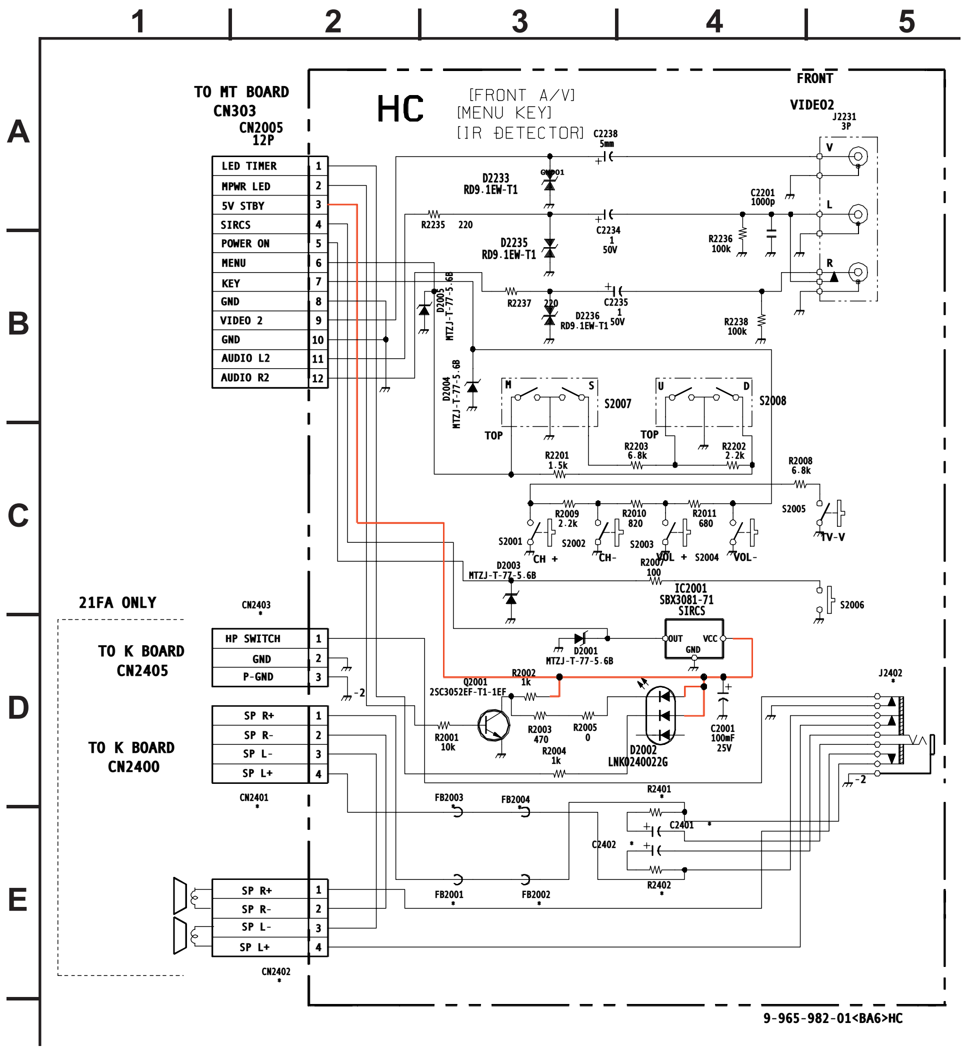
CONDUCTOR SIDE



MT BOARD LOCATOR LIST

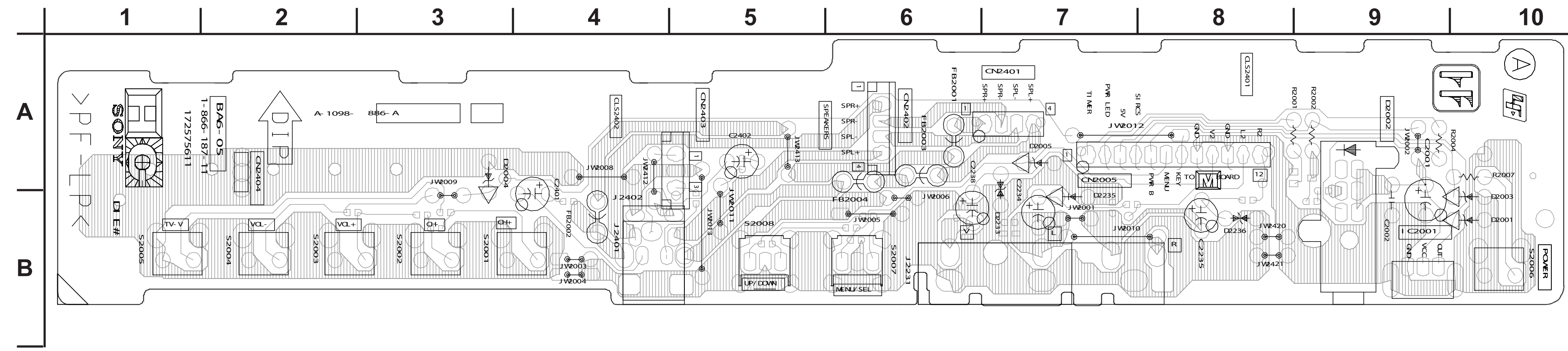
DIODE			DIODE			IC			TRANSISTOR			TRANSISTOR		
	COMP	COND		COMP	COND		COMP	COND		COMP	COND		COMP	COND
D002		B-5	**D304**		B-5	**IC001**	C-4		**Q002**		C-2	**Q503**		C-3
D004	C-5		**D351**		D-3	**IC002**		D-3	**Q004**		C-2	**Q504**	D-4	
D005		C-2	**D390**	D-3		**IC003**	B-4		**Q008**		C-2	**Q505**		B-4
D006		C-3	**D512**		D-5	**IC004**	D-6		**Q301**	C-3		**Q515**		D-6
D044		C-3	**D513**		D-5	**IC565**		D-5	**Q303**		C-6	**Q519**		C-5
D045		C-3	**D558**	C-5		**IC633**	D-6		**Q305**	C-2		**Q533**	D-4	
D050		E-1	**D559**	C-5		**IC634**	C-1		**Q306**	C-2		**Q860**	C-3	
D051		E-2	**D3501**		D-4	**IC3701**		A-5	**Q307**	C-2		**Q3005**	B-5	
D052		B-4	**D3502**		D-3				**Q316**	B-3		**Q3300**	C-2	
D110	D-6		**D3509**		D-4				**Q390**		D-6	**Q3304**	C-3	
D250		E-1							**Q391**	D-4		**Q3502**		D-6
												Q6000	C-6	

HC BOARD SCHEMATIC DIAGRAM


TO MT BOARD CN303
CN2005 12P
HC
[FRONT A/V]
[MENU KEY]
[IR DETECTOR]
FRONT
VIDEO2
LED TIMER
MPWR LED
5V STBY
SIRCS
POWER ON
MENU
KEY
GND
VIDEO 2
GND
AUDIO L2
AUDIO R2
21FA ONLY
TO K BOARD CN2405
HP SWITCH
P-GND
TO K BOARD CN2400
SP R+
SP R-
SP L-
SP L+
IC2001
SBX3081-71
SIRCS
D2002
LNK0240022G
Q2001
2SC3052EF-T1-1EF
9-965-982-01<BA6>HC

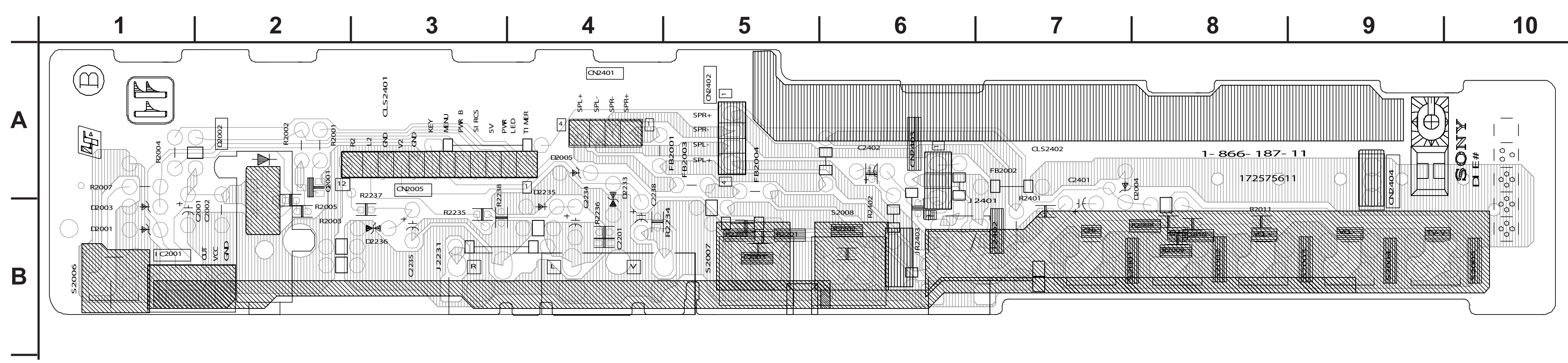
HC [FRONT A/V, MENU KEY, IR DETECTOR]

COMPONENT SIDE



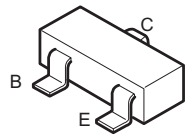
HC [FRONT A/V, MENU KEY, IR DETECTOR]

CONDUCTOR SIDE

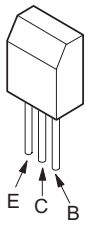


5-4. SEMICONDUCTORS

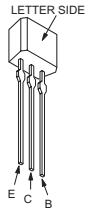
2SB709A-QRS-TX
2SD601A-QRS-TX



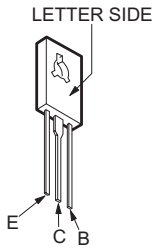
2SB734-T-34
2SC3209LK-TP



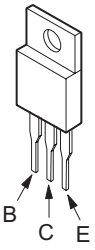
2SA1309A-QRSTA
2SC3311A-QRSTA
2SD2144S-TP-UVW



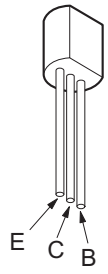
2SC3840K



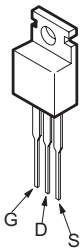
2SA1837



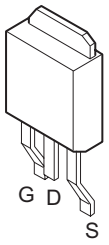
2SA1091O-TPE2



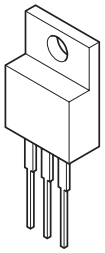
IRF614



2SK2663



2SC4793



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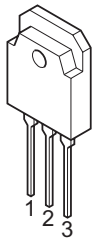
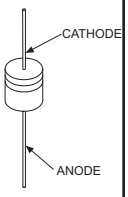
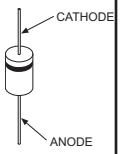


ERA38-06TP1
ERA82-004TP5
1SS133T-77
D1NS0R-TA
MTZJ-T-77-12C
MTZJ-T-77-15B
MTZJ-T-77-33B
MTZJ-T-77-39



RU-1P
ERC06-15S
EGP20DPKG23
MTZJ-T-77-5.1C
MTZJ-T-77-5.6C
MTZJ-T-77-7.5A
MTZJ-T-77-10B
MTZJ-T-77-30D
RGP10-GPKG3
RGP02-17PKG23
RGP15GPKG23



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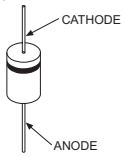
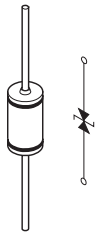
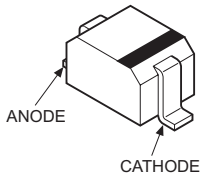
GP08DPKG23
RGP10GPKG23
RU4AM-T3



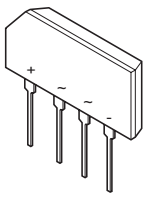
RD9.1EW-T1



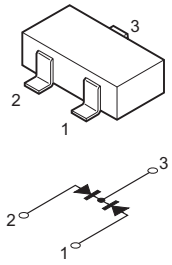
MA111-TX
UDZ-TE-17.5.1B
UDZ-TE-17.91B



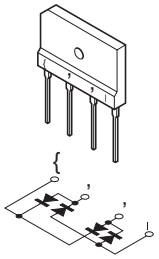
D2SB60A-F04



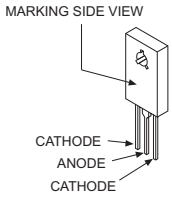
DAP202K-T-146



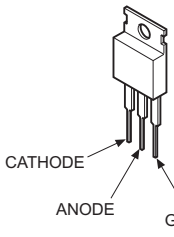
D4SB60L-F



D5LC20U



TF541M



SECTION 6: EXPLODED VIEWS

Components not identified by a part number or description are not stocked because they are seldom required for routine service.

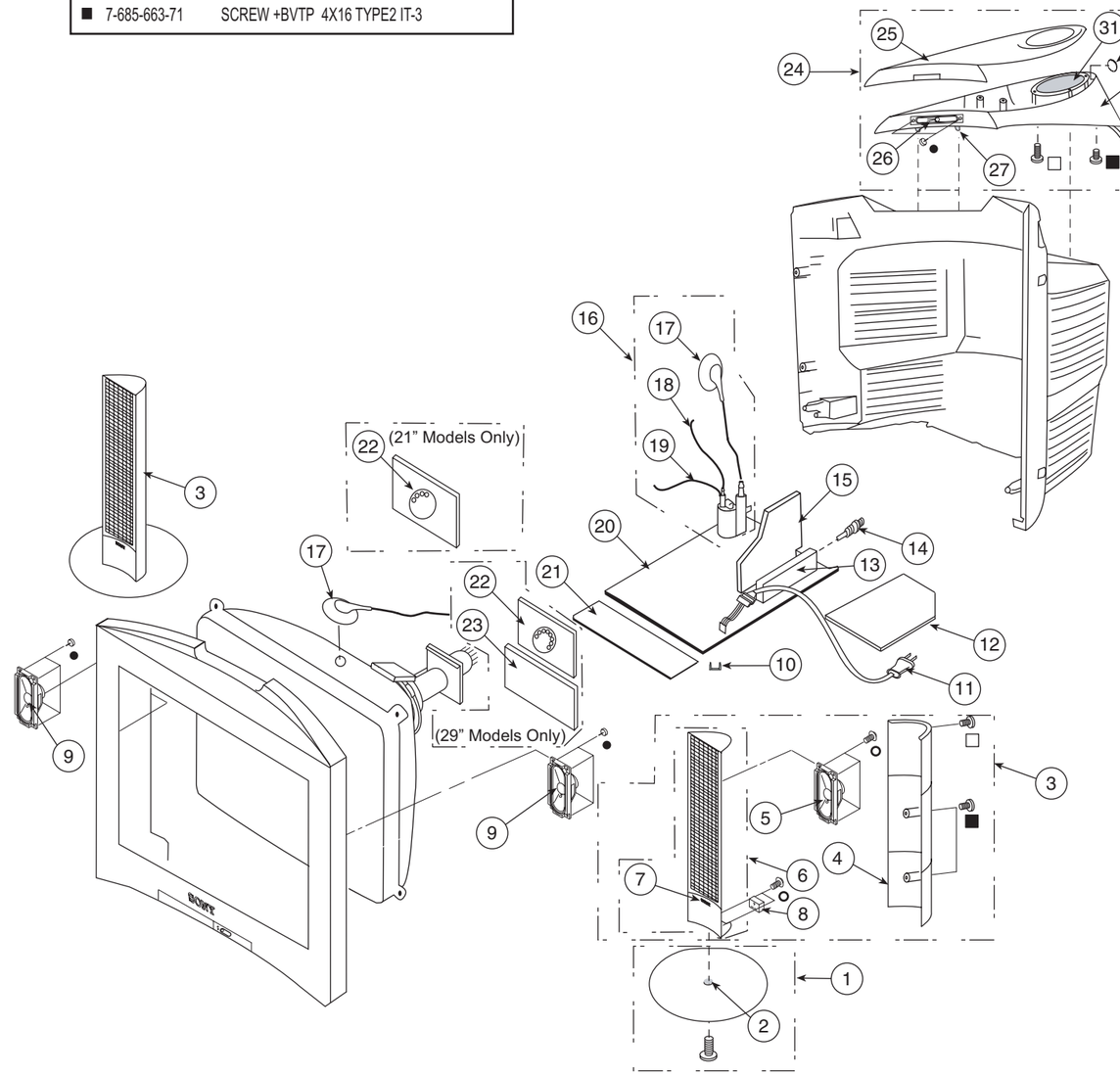
The component parts of an assembly are indicated by the reference numbers in the far right column of the parts list and within the dotted lines of the diagram.

*** Items marked with an asterisk are not stocked since they are seldom required for routine service. Expect some delay when ordering these components.**

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

6-1. CHASSIS

●	4-384-096-01	SCREW (4X16), TAPPING, +P
○	4-388-477-01	SCREW(3X16),TAPPING,+BV WASHER
□	7-685-664-79	SCREW +BVTP 4X20 TYPE2 IT-3
■	7-685-663-71	SCREW +BVTP 4X16 TYPE2 IT-3

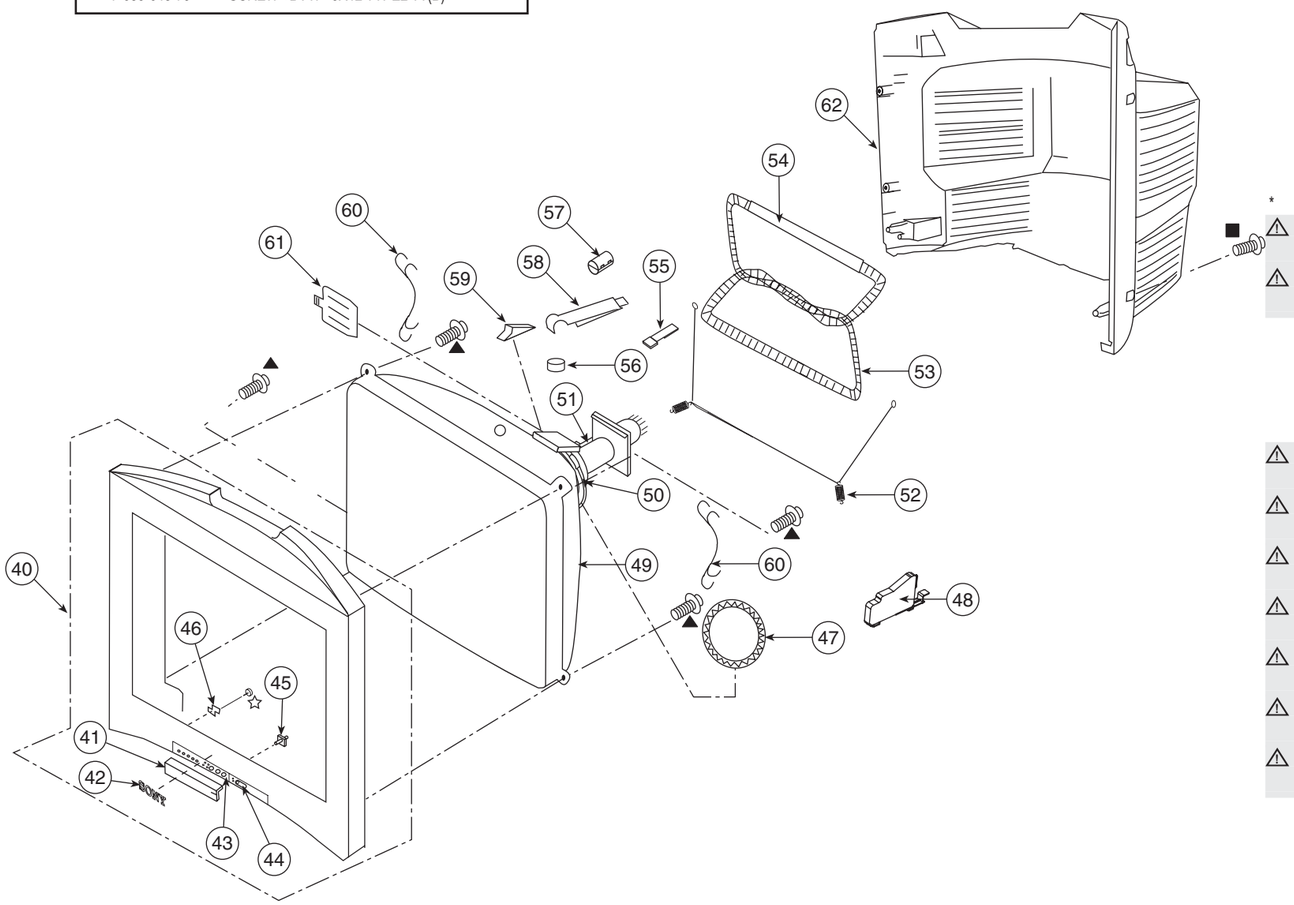


	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
	1	X-2055-179-1	BASE ASSY (KV-21FA515/29FA515 ONLY)	[2]
*	2	3-650-537-00	WASHER (KV-21FA515/29FA515 ONLY)	
*	3	A-1107-072-A	SATELLITE SPEAKER ASSY (21) (KV-21FA515 ONLY)	[4-8]
*	3	A-1106-467-A	SATELLITE SPEAKER ASSY (29) (KV-29FA515 ONLY)	[4-8]
	4	X-2050-432-1	BACK ASSY (21), ES (KV-21FA515 ONLY)	
	4	X-2050-430-1	BACK ASSY (29), ES (KV-29FA515 ONLY)	
	5	1-826-190-11	LOUDSPEAKER (6X12CM)	
	6	X-2050-431-1	FRONT ASSY (21), ES (KV-21FA515 ONLY)	[7]
	6	X-2050-429-1	FRONT ASSY (29), ES (KV-29FA515 ONLY)	[7]
	7	4-046-162-21	EMBLEM (NO.6), SONY (KV-21FA515/29FA515 ONLY)	
	8	1-780-277-11	TERMINAL BOARD (KV-21FA515/29FA515 ONLY)	
	9	1-826-190-11	LOUDSPEAKER (6X12CM)	
*	10	4-076-951-01	HINGE, PWB	
⚠	11	1-824-069-11	CORD, AC POWER(WITH CONNECTOR) (KV-21FA315/21FA515/29FA315/29FA515 LATIN NORTH ONLY)	
⚠	11	1-757-840-13	CORD, POWER (WITH CONNECTOR) (KV-21FA315/21FA515/29FA315/29FA515 LATIN SOUTH ONLY)	
	12	A-1098-868-A	K (COM) MOUNTED PC BOARD (KV-21FA315/29FA315 ONLY)	
	12	A-1098-869-A	K (VAR) BOARD, MOUNTED (KV-21FA515/29FA515 ONLY)	
⚠	13	8-598-593-70	TUNER, FSS BTF-WA421	
⚠	14	1-766-374-11	PLUG, F-PIN	
	15	A-1098-875-A	MT (VAR) BOARD, MOUNTED (KV-21FA315/21FA515 ONLY)	
	15	A-1098-873-A	MT (VAR) BOARD, MOUNTED (KV-29FA315/29FA515 ONLY)	
⚠	16	1-453-316-21	FBT ASSY NX-1748//X4A4 (KV-21FA315/21FA515 ONLY)	[17-19]
⚠	16	1-453-310-11	FBT ASSY NX-4521//X4J4 (KV-29FA315/29FA515 ONLY)	[17-19]
⚠	17	1-251-642-52	CAP ASSY, HIGH-VOLTAGE (KV-21FA315/21FA515 ONLY)	
⚠	17	1-251-715-22	CAP ASSY, HIGH-VOLTAGE (KV-29FA315/29FA515 ONLY)	
⚠	18	1-900-800-65	CONNECTOR ASSY, FOCUS LEAD (KV-21FA315/21FA515 ONLY)	
⚠	18	1-900-800-82	WIRE ASSY, FOCUS (KV-29FA315/29FA515 ONLY)	
⚠	19	1-900-803-22	WIRE ASSY, G2 LEAD	
	20	A-1098-839-A	A BOARD, COMPLETE (KV-21FA315/21FA515 LATIN NORTH ONLY) The high-voltage leads associated with the FBT on this A Board are not included and must be ordered separately (SEE 17-19).	
	20	A-1102-832-A	A BOARD, COMPLETE (KV-21FA315/21FA515 LATIN SOUTH ONLY) The high-voltage leads associated with the FBT on this A Board are not included and must be ordered separately (SEE 17-19).	
	20	A-1098-834-A	A BOARD, COMPLETE (KV-29FA315/29FA515 LATIN NORTH ONLY) The high-voltage leads associated with the FBT on this A Board are not included and must be ordered separately (SEE 17-19).	
	20	A-1102-834-A	A BOARD, COMPLETE (KV-29FA315/29FA515 LATIN SOUTH ONLY) The high-voltage leads associated with the FBT on this A Board are not included and must be ordered separately (SEE 17-19).	
	21	A-1098-888-A	HC (VAR) BOARD, MOUNTED (KV-21FA315/21FA515 ONLY)	
	21	A-1098-887-A	HC (VAR) BOARD, MOUNTED (KV-29FA315/29FA515 ONLY)	
	22	A-1108-297-A	CV (VAR) BOARD, MOUNTED (KV-21FA315/21FA515 ONLY)	
	22	A-1111-814-A	C (VAR) BOARD, MOUNTED (KV-29FA315/29FA515 ONLY)	
	23	A-1111-815-A	V (VAR) BOARD, MOUNTED (KV-29FA315/29FA515 ONLY)	
*	24	A-1106-465-A	SPEAKER ASSY (FA315) (KV-21FA315/29FA315 ONLY)	[25-31]
*	24	A-1106-464-A	SPEAKER ASSY (FA515) (KV-21FA515/29FA515 ONLY)	[25-31]
*	25	2-582-076-01	COVER, TOP (21-29)	
	26	1-826-191-11	LOUDSPEAKER (19.2X4.2CM)	
*	27	4-068-528-31	FOOT	
	28	1-830-588-11	CONNECTION CABLE	
*	29	2-582-077-11	COVER, BOTTOM (21-29)	
	30	2-582-079-01	CUSHION, DUCT (21-29)	
	31	1-826-189-11	LOUDSPEAKER (13CM)	

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

6-2. PICTURE TUBE

■	7-685-663-71	SCREW +BVTP 4X16 TYPE2 IT-3
▲	4-365-808-01	SCREW (5), TAPPING (KV-21FA315/21FA515 ONLY)
▲	4-046-765-12	SCREW, TAPPING 7+CROWN WASHER (KV-29FA315/29FA515 ONLY)
☆	7-685-648-79	SCREW +BVTP 3X12 TYPE2 TT(B)



	REF. NO.	PART NO.	DESCRIPTION	[ASSEMBLY INCLUDES]
	40	X-2048-853-1	BEZNET ASSY (21) (KV-21FA315/21FA515 ONLY)	[41-46]
	40	X-2048-854-1	BEZNET ASSY (29) (KV-29FA315/29FA515 ONLY)	
	41	2-582-072-11	DOOR (21-29)	
	42	4-046-161-21	EMBLEM, SONY NO.8 (KV-21FA315/21FA515 ONLY)	
	42	4-046-160-31	EMBLEM, SONY NO.9 (KV-29FA315/29FA515 ONLY)	
	43	2-582-073-01	LABEL, CONTROL	
	44	4-102-305-11	BUTTON, POWER	
	45	4-102-306-12	GUIDE, LED/IR	
*	46	4-083-303-01	SPRING, METAL	
⚠	47	1-456-285-11	COIL, NA ROTATION (RT-154) (KV-21FA315/21FA515 ONLY)	
⚠	47	1-452-896-11	COIL, NA ROTATION (RT-200) (KV-29FA315/29FA515 ONLY)	
	48	2-582-360-01	SUPPORT, CRT (21) (KV-21FA315/21FA515 ONLY)	
	48	2-582-075-01	SUPPORT, CRT (29) (KV-29FA315/29FA515 ONLY)	
⚠	49	8-738-868-05	CRT 21RSN(BGD)(FOR VPA) A51LPT60X (KV-21FA315/21FA515 LATIN NORTH ONLY)	
⚠	49	8-738-822-05	CRT 21RSN(FOR NORTH AMERICA) A51LPTXXX (KV-21FA315/21FA515 LATIN NORTH ONLY)	
⚠	49	8-738-831-05	CRT 21RSN(SDP) A51LPT50X (KV-21FA315/21FA515 LATIN NORTH ONLY)	
⚠	49	8-738-823-05	CRT 21RSN(FOR EQUATORIAL AREA) A51LPT**X (KV-21FA315/21FA515 LATIN SOUTH ONLY)	
⚠	49	8-738-838-05	CRT 21RSN(SDP)(SOUTH) A51LPT50X (KV-21FA315/21FA515 LATIN SOUTH ONLY)	
⚠	49	8-735-082-05	CRT 29RSN(SDP) M68LNH050X (KV-29FA315/29FA515 LATIN NORTH ONLY)	
⚠	49	8-735-083-05	CRT 29RSN(SDP)(SOUTH) M68LNH050X (KV-29FA515/29FA515 LATIN SOUTH ONLY)	
⚠	50	8-451-505-71	DY Y21RSA-V (KV-21FA315/21FA515 ONLY)	
⚠	50	8-451-494-41	DY Y29RSA-V (KV-29FA315/29FA515 ONLY)	
⚠	51	1-451-561-21	NECK ASSEMBLY (KV-21FA315/21FA515 ONLY)	
⚠	51	8-453-011-11	NECK ASSEMBLY NA299-M (KV-29FA315/29FA515 ONLY)	
*	52	4-375-394-01	SPRING, TENSION (KV-21FA315/21FA515 ONLY)	
	52	4-036-329-01	SPRING (B), TENSION (KV-29FA315/29FA515 ONLY)	
⚠	53	1-456-153-11	COIL, DEGAUSSING (KV-21FA315/21FA515 ONLY)	
⚠	53	1-419-156-22	COIL, DEGAUSSING (KV-29FA315/29FA515 LATIN NORTH ONLY)	
⚠	53	1-419-523-21	COIL, DEGAUSSING (KV-29FA515/29FA515 LATIN SOUTH ONLY)	
	54	4-103-011-01	TUBE, DGC (C)	
	55	4-083-414-01	PIECE A(110), CONV CORRECT	
	56	1-452-032-00	MAGNET,DISC (KV-21FA315/21FA515 ONLY)	
	56	1-452-885-11	MAGNET, LANDING (KV-29FA315/29FA515 ONLY)	
	57	1-500-586-11	FILTER, CLAMP (FERRITE CORE) (KV-21FA315/21FA515/29FA315/29FA515 LATIN SOUTH ONLY)	
*	58	4-062-970-12	CLIP (29RSN), DGC (KV-29FA315/29FA515 ONLY)	
	59	4-053-005-01	SPACER, DY	
*	60	4-080-810-22	BAND, DEGAUSS COIL (KV-21FA315/21FA515 ONLY)	
	61	4-081-170-01	PLATE, TLH CORRECTION	
	62	2-582-069-11	COVER, REAR (21) (KV-21FA315 ONLY)	
	62	2-582-069-01	COVER, REAR (21) (KV-21FA515 ONLY)	
	62	2-582-083-12	COVER, REAR (29) (KV-29FA315 ONLY)	
	62	2-582-083-02	COVER, REAR (29) (KV-29FA515 ONLY)	

SECTION 7: ELECTRICAL PARTS LIST

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

The components in this manual identified by the following symbol: ⋈ indicate parts that have been carefully factory-selected to satisfy regulations regarding X-ray radiation for each set.

Should replacement be required for one of these components, replace only with the value originally used.

*** Items marked with an asterisk are not stocked since they are seldom required for routine service. Expect some delay when ordering these components.**

RESISTORS

- **All resistors are in ohms**
- **F : nonflammable**
- **All variable and adjustable resistors have characteristic curve B, unless otherwise noted.**

When ordering parts by reference number, please include the board name.

A

REF. NO.	PART NO.	DESCRIPTION	VALUES
A			
	A-1098-839-A	**A BOARD, COMPLETE (KV-21FA315/21FA515 LATIN NORTH ONLY)**	
	A-1102-832-A	**A BOARD, COMPLETE (KV-21FA315/21FA515 LATIN SOUTH ONLY)**	
	A-1098-834-A	**A BOARD, COMPLETE (KV-29FA315/29FA515 LATIN NORTH ONLY)**	
	A-1102-834-A	**A BOARD, COMPLETE (KV-29FA315/29FA515 LATIN SOUTH ONLY)**	
	The high-voltage leads associated with the FBT on these A boards are not included and must be ordered separately.		
	Order the appropriate leads when requesting thess A Boards:		
⚠	1-251-642-52	CAP ASSY, HIGH-VOLTAGE (KV-21FA315/21FA515 ONLY)	
⚠	1-251-715-22	CAP ASSY, HIGH-VOLTAGE (KV-29FA315/29FA515 ONLY)	
⚠	1-900-800-65	CONNECTOR ASSY, FOCUS LEAD (KV-21FA315/21FA515 ONLY)	
⚠	1-900-800-82	WIRE ASSY, FOCUS (KV-29FA315/29FA515 ONLY)	
⚠	1-900-803-22	WIRE ASSY, G2 LEAD	
*	4-374-846-11	COVER, CAPACITOR, CAP TYPE	
	4-382-854-11	SCREW (M3X10), P, SW (+)	
	CAPACITOR		
C049	1-126-964-11	ELECT	10µF 20% 50V
C050	1-126-935-11	ELECT	470µF 20% 16V
C051	1-126-933-11	ELECT	100µF 20% 16V
C052	1-162-968-11	CERAMIC CHIP	0.0047µF 10% 50V
C053	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C054	1-126-967-11	ELECT	47µF 20% 50V
C055	1-126-933-11	ELECT	100µF 20% 16V
C056	1-135-834-91	CERAMIC CHIP	2.2E+06pF 6.3V
C059	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C080	1-128-934-91	CERAMIC CHIP	0.33µF 20% 10V
C081	1-128-934-91	CERAMIC CHIP	0.33µF 20% 10V
C200	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C201	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C202	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C203	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C206	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C207	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C208	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C209	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C212	1-126-963-11	ELECT	4.7µF 20% 50V
C213	1-126-963-11	ELECT	4.7µF 20% 50V
C309	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C362	1-126-964-11	ELECT	10µF 20% 50V
C365	1-164-625-11	CERAMIC (KV-21FA315/21FA515 LATIN NORTH ONLY)	680pF 10% 500V
C365	1-162-117-00	CERAMIC (ALL EXCEPT KV-21FA315/21FA515 LATIN NORTH ONLY)	100pF 10% 500V
C366	1-126-964-11	ELECT	10µF 20% 50V
C367	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C368	1-126-964-11	ELECT	10µF 20% 50V
C374	1-107-826-11	CERAMIC CHIP	0.1µF 10% 16V
C400	1-128-934-91	CERAMIC CHIP	0.33µF 20% 10V
C401	1-164-227-11	CERAMIC CHIP	0.022µF 10% 25V
C402	1-164-174-11	CERAMIC CHIP	0.0082µF 10% 25V
C403	1-162-967-11	CERAMIC CHIP	0.0033µF 10% 50V
C404	1-162-967-11	CERAMIC CHIP	0.0033µF 10% 50V
C405	1-164-677-11	CERAMIC CHIP	0.033µF 10% 16V
C406	1-164-677-11	CERAMIC CHIP	0.033µF 10% 16V
C407	1-115-412-11	CERAMIC CHIP	680pF 5% 25V
C408	1-115-412-11	CERAMIC CHIP	680pF 5% 25V
C409	1-125-891-11	CERAMIC CHIP	0.47µF 10% 10V
C410	1-125-891-11	CERAMIC CHIP	0.47µF 10% 10V

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

A

REF. NO.	PART NO.	DESCRIPTION	VALUES		
C411	1-128-934-91	CERAMIC CHIP	0.33µF	20%	10V
C412	1-126-961-11	ELECT	2.2µF	20%	50V
C413	1-126-960-11	ELECT	1µF	20%	50V
C414	1-126-960-11	ELECT	1µF	20%	50V
C415	1-126-960-11	ELECT	1µF	20%	50V
C416	1-126-960-11	ELECT	1µF	20%	50V
C417	1-115-416-11	CERAMIC CHIP	0.001µF	5%	25V
C418	1-126-963-11	ELECT	4.7µF	20%	50V
C420	1-126-960-11	ELECT	1µF	20%	50V
C422	1-126-947-11	ELECT	47µF	20%	35V
C431	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C432	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
	(KV-29FA315/29FA515 LATIN NORTH ONLY)				
C434	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C470	1-126-935-11	ELECT	470µF	20%	16V
C476	1-126-964-11	ELECT	10µF	20%	50V
C502	1-126-959-11	ELECT	0.47µF	20%	50V
C503	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C504	1-102-228-00	CERAMIC	470pF	10%	500V
C505	1-102-228-00	CERAMIC	470pF	10%	500V
C506	1-106-383-00	MYLAR	0.047µF	10%	200V
⚠ C507	1-162-116-00	CERAMIC	680pF	10%	2KV
⚠ C509	1-162-116-00	CERAMIC	680pF	10%	2KV
⚠ C510	1-137-150-11	FILM	0.01µF	5%	100V
⚠ C511	1-117-642-11	FILM	8200pF	3%	1.2KV
	(KV-21FA315/21FA515 ONLY)				
⚠ C511	1-136-086-00	FILM	17000pF	3%	1.2KV
	(KV-29FA315/29FA515 ONLY)				
C512	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
⚠ C513	1-129-722-00	FILM	0.047µF	5%	630V
⚠ C514	1-115-521-11	FILM	0.82µF	5%	250V
	(KV-21FA315/21FA515 ONLY)				
⚠ C514	1-109-844-11	FILM	0.68µF	5%	400V
	(KV-29FA315/29FA515 ONLY)				
C515	1-104-987-11	MYLAR	0.001µF	5%	200V
⚠ C516	1-115-519-11	FILM	0.56µF	5%	250V
	(KV-21FA315/21FA515 ONLY)				
⚠ C516	1-115-521-11	FILM	0.82µF	5%	250V
	(KV-29FA315/29FA515ONLY)				
C517	1-107-651-11	ELECT	4.7µF	20%	250V
	(KV-21FA315/21FA515 ONLY)				
C517	1-107-649-11	ELECT	2.2µF	20%	250V
	(KV-29FA315/29FA515 ONLY)				
C518	1-106-383-00	MYLAR	0.047µF	10%	200V
	(KV-21FA315/21FA515 ONLY)				
C518	1-106-387-00	MYLAR	0.068µF	10%	200V
	(KV-29FA315/29FA515 ONLY)				
C519	1-102-244-00	CERAMIC	220pF	10%	500V
C520	1-164-646-11	CERAMIC	2200pF	10%	500V
	(KV-21FA315/21FA515 ONLY)				
C520	1-165-136-11	CERAMIC	3300pF	10%	500V
	(KV-29FA315/29FA515 ONLY)				
C522	1-126-960-11	ELECT	1µF	20%	50V
C523	1-126-934-11	ELECT	220µF	20%	16V
C525	1-102-244-00	CERAMIC	220pF	10%	500V
C526	1-107-662-11	ELECT	22µF	20%	350V
⚠ C527	1-162-116-00	CERAMIC	680pF	10%	2KV
C528	1-162-966-11	CERAMIC CHIP	0.0022µF	10%	50V
C529	1-104-662-91	ELECT	22µF	20%	25V
C530	1-164-690-91	CERAMIC CHIP	0.0022µF	5%	50V
	(KV-29FA315/29FA515 ONLY)				
C531	1-107-635-11	ELECT	4.7µF	20%	160V
	(KV-21FA315/21FA515 ONLY)				
C531	1-126-965-91	ELECT	22µF	20%	50V
	(KV-29FA315/29FA515 ONLY)				
C532	1-126-963-11	ELECT	4.7µF	20%	50V
	(KV-21FA315/21FA515 ONLY)				
C532	1-126-965-91	ELECT	22µF	20%	50V
	(KV-29FA315/29FA515 ONLY)				
C534	1-126-967-11	ELECT	47µF	20%	50V
C535	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C537	1-126-941-11	ELECT	470µF	20%	25V
C539	1-126-941-11	ELECT	470µF	20%	25V
C540	1-131-867-51	ELECT	100µF		160V
C541	1-128-560-11	ELECT	22µF	20%	100V
C545	1-106-387-00	MYLAR	0.068µF	10%	200V
C548	1-100-831-91	CERAMIC CHIP	0.001µF	2%	50V
	(KV-21FA315/21FA515 ONLY)				
C549	1-100-831-91	CERAMIC CHIP	0.001µF	2%	50V
	(KV-21FA315/21FA515 ONLY)				
⚠ C553	1-117-412-11	FILM	0.24µF	5%	250V
	(KV-29FA315/29FA515 ONLY)				
⚠ C554	1-117-214-11	CERAMIC	0.001µF	10%	2KV
	(KV-21FA315/21FA515 ONLY)				
⚠ C554	1-117-629-11	FILM	2700pF	3%	1.2KV
	(KV-29FA315/29FA515 ONLY)				
C561	1-126-967-11	ELECT	47µF	20%	50V
C563	1-104-666-11	ELECT	220µF	20%	25V
C565	1-126-969-11	ELECT	220µF	20%	50V

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	REF. NO.	PART NO.	DESCRIPTION	VALUES		
	C568	1-137-190-91	FILM	0.22µF	5%	50V
⚠	C581	1-165-529-11	MYLAR	0.22µF	10	275V
	C588	1-130-491-00	MYLAR	0.047µF	5%	50V
	C590	1-126-964-11	ELECT	10µF	20%	50V
	C600	1-117-703-11	CERAMIC	0.0047µF	99%	250V
		(KV-21FA315/21FA515/29FA315/29FA515 LATIN SOUTH ONLY)				
⚠	C601	1-165-529-11	MYLAR	0.22µF	10	275V
	C602	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
⚠	C603	1-165-529-11	MYLAR	0.22µF	10	275V
	C604	1-164-625-11	CERAMIC	680pF	10%	500V
⚠	C608	1-119-912-51	CERAMIC	0.001µF	20%	125V
	C609	1-164-625-11	CERAMIC	680pF	10%	500V
	C612	1-104-665-11	ELECT	100µF	20%	25V
	C613	1-117-214-11	CERAMIC	0.001µF	10%	2KV
		(KV-21FA315/21FA515/29FA315/29FA515 LATIN SOUTH ONLY)				
	C614	1-117-214-11	CERAMIC	0.001µF	10%	2KV
		(KV-21FA315/21FA515/29FA315/29FA515 LATIN SOUTH ONLY)				
	C615	1-117-214-11	CERAMIC	0.001µF	10%	2KV
		(KV-21FA315/21FA515/29FA315/29FA515 LATIN SOUTH ONLY)				
	C616	1-126-943-11	ELECT	2200µF	20%	25V
	C617	1-123-024-21	ELECT	33µF		160V
	C619	1-117-214-11	CERAMIC	0.001µF	10%	2KV
		(KV-21FA315/21FA515/29FA315/29FA515 LATIN SOUTH ONLY)				
	C620	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
	C621	1-100-961-11	ELECT	680µF	20%	250V
⚠	C622	1-119-912-51	CERAMIC	0.001µF	20%	125V
	C629	1-100-961-11	ELECT	680µF	20%	250V
	C632	1-126-943-11	ELECT	2200µF	20%	25V
	C633	1-136-479-11	FILM	0.001µF	5%	100V
	C634	1-126-964-11	ELECT	10µF	20%	50V
	C635	1-126-963-11	ELECT	4.7µF	20%	50V
	C637	1-136-165-00	FILM	0.1µF	5%	50V
	C638	1-126-943-11	ELECT	2200µF	20%	25V
	C642	1-126-969-11	ELECT	220µF	20%	50V
	C643	1-136-165-00	FILM	0.1µF	5%	50V
	C645	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V
	C647	1-126-947-11	ELECT	47µF	20%	35V
	C648	1-164-143-11	CERAMIC	0.001µF	10%	1KV
	C649	1-164-143-11	CERAMIC	0.001µF	10%	1KV
	C651	1-126-942-61	ELECT	1000µF	20%	25V
		(KV-21FA315/21FA515/29FA315/29FA515 LATIN NORTH ONLY)				
	C651	1-126-943-11	ELECT	2200µF	20%	25V
		(KV-21FA315/21FA515/29FA315/29FA515 LATIN SOUTH ONLY)				

	REF. NO.	PART NO.	DESCRIPTION	VALUES		
	C652	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
	C653	1-126-964-11	ELECT	10µF	20%	50V
	C655	1-135-572-51	ELECT	1000µF	20%	50V
	C656	1-161-964-91	CERAMIC	0.0047µF		250V
	C657	1-135-572-51	ELECT	1000µF	20%	50V
	C658	1-161-964-91	CERAMIC	0.0047µF		250V
	C659	1-164-677-11	CERAMIC CHIP	0.033µF	10%	16V
	C661	1-126-947-11	ELECT	47µF	20%	35V
	C669	1-164-625-11	CERAMIC	680pF	10%	500V
	C670	1-164-625-11	CERAMIC	680pF	10%	500V
	C672	1-165-953-11	FILM	47000pF	3%	800V
	C690	1-126-971-11	ELECT	470µF	20%	50V

CONNECTOR

	CN202	1-695-915-11	TAB (CONTACT)	
*	CN412	1-564-506-11	PLUG, CONNECTOR	3P
*	CN501	1-580-798-11	CONNECTOR PIN (DY)	6P
*	CN503	1-564-510-11	PLUG, CONNECTOR	7P
	CN505	1-785-879-11	CONNECTOR, ONE TOUCH (KV-29FA315/29FA515 ONLY)	
*	CN508	1-508-786-00	PIN, CONNECTOR (5MM PITCH) (KV-21FA315/21FA515 ONLY)	2P
*	CN508	1-573-963-11	PIN, CONNECTOR (PC BOARD) (KV-29FA315/29FA515 ONLY)	
*⚠	CN600	1-580-843-11	PIN, CONNECTOR (POWER)	
	CN601	1-695-915-11	TAB (CONTACT)	

DIODE

D009	8-719-982-22	DIODE	MTZJ-30D
D200	8-719-069-60	DIODE	UDZSTE-179.1B
D201	8-719-069-60	DIODE	UDZSTE-179.1B
D209	8-719-069-60	DIODE	UDZSTE-179.1B
D210	8-719-069-60	DIODE	UDZSTE-179.1B
D211	8-719-069-60	DIODE	UDZSTE-179.1B
D212	8-719-069-60	DIODE	UDZSTE-179.1B
D213	8-719-510-02	DIODE	D1NS4
D218	8-719-929-15	DIODE	HZS9.1NB2
D219	8-719-929-15	DIODE	HZS9.1NB2
D305	8-719-070-62	DIODE	PDZ9.1B-115
D306	8-719-070-62	DIODE	PDZ9.1B-115
D307	8-719-070-62	DIODE	PDZ9.1B-115
D308	8-719-977-28	DIODE	DTZ10B
D309	8-719-069-60	DIODE	UDZSTE-179.1B
D310	8-719-108-12	DIODE	RD9.1EW
D311	8-719-069-60	DIODE	UDZSTE-179.1B

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REF. NO.	PART NO.	DESCRIPTION	VALUES
D324	8-719-069-60	DIODE	UDZSTE-179.1B
D325	8-719-069-60	DIODE	UDZSTE-179.1B
D405	8-719-404-50	DIODE	MA111-TX
D414	8-719-921-63	DIODE	MTZJ-7.5B
D418	1-216-864-11	SHORT CHIP	
D425	8-719-056-84	DIODE	UDZ-TE-17-7.5B
D500	8-719-081-00	DIODE	BY228/A52A/
D501	8-719-404-50	DIODE	MA111-TX
⚠ D503	8-719-081-00	DIODE	BY228/A52A/
	(KV-29FA315/29FA515 ONLY)		
D504	6-500-485-01	DIODE	FR305G-EB
D505	8-719-908-03	DIODE	GP08D
D506	8-719-908-03	DIODE	GP08D
D508	8-719-404-50	DIODE	MA111-TX
D509	8-719-404-50	DIODE	MA111-TX
⚠ D515	8-719-075-41	DIODE	PR1004GT
D516	8-719-404-50	DIODE	MA111-TX
D518	8-719-404-50	DIODE	MA111-TX
⚠ D519	8-719-302-43	DIODE	EL1Z
D520	8-719-404-50	DIODE	MA111-TX
D521	8-719-921-63	DIODE	MTZJ-7.5B
D522	8-719-404-50	DIODE	MA111-TX
D525	8-719-404-50	DIODE	MA111-TX
D526	8-719-404-50	DIODE	MA111-TX
⚠ D530	6-500-531-01	DIODE	PG154R
D531	6-500-531-01	DIODE	PG154R
D534	8-719-074-25	DIODE	PG104R
D535	8-719-404-50	DIODE	MA111-TX
D551	8-719-069-55	DIODE	UDZSTE-175.6B
D561	8-719-075-33	DIODE	1N4003GA
D580	8-719-991-33	DIODE	1SS133T-77
D588	8-719-404-50	DIODE	MA111-TX
D589	8-719-404-50	DIODE	MA111-TX
D590	8-719-404-50	DIODE	MA111-TX
D600	8-719-510-53	DIODE	D4SB60L
D602	8-719-064-12	DIODE	S1NB60-4062
D611	8-719-062-40	DIODE	D4SBL20µF3
D612	8-719-068-00	DIODE	ERC04-06SE
	(KV-21FA315/21FA515/29FA315/29FA515 LATIN NORTH ONLY)		
D613	8-719-068-00	DIODE	ERC04-06SE
	(KV-21FA315/21FA515/29FA315/29FA515 LATIN NORTH ONLY)		

REF. NO.	PART NO.	DESCRIPTION	VALUES
D614	8-719-057-52	DIODE	EZ0150AV1
D615	6-501-247-01	DIODE	D15XBS6
D618	8-719-979-64	DIODE	µF4005/23
D620	8-719-404-50	DIODE	MA111-TX
D621	6-500-181-01	DIODE	MA6D50
D628	8-719-404-50	DIODE	MA111-TX
D629	8-719-083-82	DIODE	UDZS-TE17-12B
D631	6-500-567-01	DIODE	10ERB20-TA1B2
D640	8-719-404-50	DIODE	MA111-TX
D641	8-719-404-50	DIODE	MA111-TX
D645	6-500-567-01	DIODE	10ERB20-TA1B2
D646	8-719-404-50	DIODE	MA111-TX
D647	6-500-567-01	DIODE	10ERB20-TA1B2
D651	8-719-109-93	DIODE	RD6.2ESB2
D690	8-719-982-13	DIODE	MTZJ-27

FUSE

⚠ F601	1-576-193-11	FUSE	6.3A	125V
	(KV-21FA315/21FA515/29FA315/29FA515 LATIN NORTH ONLY)			
⚠ F601	1-532-506-32	FUSE	6.3A	250V
	(KV-21FA315/21FA515/29FA315/29FA515 LATIN SOUTH ONLY)			

FERRITE BEAD

FB501	1-412-911-11	FERRITE	0µH
FB502	1-412-911-11	FERRITE	0µH
FB503	1-412-911-11	FERRITE	0µH
FB505	1-412-911-11	FERRITE	0µH
FB602	1-412-911-11	FERRITE	0µH
FB604	1-412-911-11	FERRITE	0µH
FB613	1-410-397-21	FERRITE	1.1µH
FB614	1-412-911-11	FERRITE	0µH
FB616	1-412-911-11	FERRITE	0µH
FB617	1-412-911-11	FERRITE	0µH

FUSE HOLDER

⚠ FH1	1-533-223-11	FUSE HOLDER	0A	0V
⚠ FH2	1-533-223-11	FUSE HOLDER	0A	0V

IC

IC302	8-759-353-00	IC	NJM2534M(TE2)
IC400	6-703-190-01	IC	NJW1134AGK1-TE2
IC501	8-759-700-07	IC	NJM2903M
⚠ IC561	6-703-470-01	IC	STV9302A
	(KV-21FA315/21FA515 ONLY)		

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	REF. NO.	PART NO.	DESCRIPTION	VALUES
⚠	IC561	8-759-980-58	IC	TDA8172
		(KV-29FA315/29FA515 ONLY)		
	IC600	6-705-810-01	IC	MCZ3001DB
	IC601	8-749-017-76	IC	DM-58M
	IC609	8-759-653-07	IC	PQ09RD21J00H
		JACK		
*	J201	1-818-351-11	S TERMINAL BLOCK	
*	J206	1-817-461-12	PIN JACK BLOCK	5P
*	J207	1-818-352-12	PIN JACK WITH DIN	
		CHIP CONDUCTOR		
	JR1	1-216-864-11	SHORT CHIP	
	JR2	1-216-864-11	SHORT CHIP	
	JR3	1-216-864-11	SHORT CHIP	
	JR4	1-216-864-11	SHORT CHIP	
	JR9	1-216-864-11	SHORT CHIP	
	JR10	1-216-864-11	SHORT CHIP	
	JR16	1-216-864-11	SHORT CHIP	
	JR332	1-216-864-11	SHORT CHIP	
	JR334	1-216-864-11	SHORT CHIP	
	JR335	1-216-864-11	SHORT CHIP	
	JR410	1-216-864-11	SHORT CHIP	
	JR411	1-216-864-11	SHORT CHIP	
	JR501	1-216-864-11	SHORT CHIP	
	JR502	1-216-864-11	SHORT CHIP	
		COIL		
	L003	1-414-856-11	INDUCTOR	10µH
	L004	1-414-857-11	INDUCTOR	100µH
	L009	1-414-857-11	INDUCTOR	100µH
	L501	1-406-677-11	INDUCTOR	10MH
	L502	1-412-552-11	INDUCTOR	2.2MH
	L503	1-406-677-11	INDUCTOR	10MH
⚠	L505	1-419-714-11	INDUCTOR	100µH
		(KV-29FA315/29FA515 ONLY)		
	L510	1-406-981-21	INDUCTOR	470µH
		(KV-21FA315/21FA515 ONLY)		
	L511	1-409-955-31	INDUCTOR	8MH
	L515	1-412-529-11	INDUCTOR	22µH
	L517	1-412-552-11	INDUCTOR	2.2MH
		(KV-29FA315/29FA515 ONLY)		

	REF. NO.	PART NO.	DESCRIPTION	VALUES
	L605	1-412-911-11	FERRITE	0µH
	L606	1-412-911-11	FERRITE	0µH
	L608	1-412-529-11	INDUCTOR	22µH
	L609	1-412-529-11	INDUCTOR	22µH
		PHOTO COUPLER		
⚠	PH602	8-749-924-35	PHOTO COUPLER	ON3171-R
		IC LINK		
	PS609	1-532-984-11	IC LINK	2A 50V
		TRANSISTOR		
	Q005	8-729-120-28	TRANSISTOR	2SC1623-L5L6
	Q300	8-729-600-22	TRANSISTOR	2SA1235-F
	Q304	8-729-120-28	TRANSISTOR	2SC1623-L5L6
	Q402	8-729-120-28	TRANSISTOR	2SC1623-L5L6
	Q403	8-729-120-28	TRANSISTOR	2SC1623-L5L6
	Q405	8-729-120-28	TRANSISTOR	2SC1623-L5L6
	Q412	8-729-120-28	TRANSISTOR	2SC1623-L5L6
	Q501	8-729-140-50	TRANSISTOR	2SC3209LK
⚠	Q502	6-550-042-01	TRANSISTOR	2SD2627LS-YB11
		(KV-21FA315/21FA515 ONLY)		
⚠	Q502	6-550-107-01	TRANSISTOR	2SD2645-YB
		(KV-29FA315/29FA515 ONLY)		
	Q509	8-729-120-28	TRANSISTOR	2SC1623-L5L6
⚠	Q511	8-729-120-28	TRANSISTOR	2SC1623-L5L6
⚠	Q512	8-729-809-29	TRANSISTOR	2SC4159-E
	Q530	8-729-120-28	TRANSISTOR	2SC1623-L5L6
	Q531	8-729-600-22	TRANSISTOR	2SA1235-F
	Q532	6-550-362-01	TRANSISTOR	KTA1279
	Q561	8-729-120-28	TRANSISTOR	2SC1623-L5L6
	Q562	8-729-600-22	TRANSISTOR	2SA1235-F
	Q564	8-729-120-28	TRANSISTOR	2SC1623-L5L6
	Q582	8-729-120-28	TRANSISTOR	2SC1623-L5L6
	Q583	8-729-600-22	TRANSISTOR	2SA1235-F
	Q600	6-550-882-01	TRANSISTOR	2SK3568 (LBS2SONY,Q
	Q601	6-550-882-01	TRANSISTOR	2SK3568 (LBS2SONY,Q
	Q605	8-729-140-96	TRANSISTOR	2SD774-34
	Q606	8-729-120-28	TRANSISTOR	2SC1623-L5L6
	Q608	8-729-922-37	TRANSISTOR	2SD2144S-UVW
	Q611	6-550-409-01	TRANSISTOR	KSC2383-O
	Q690	8-729-600-22	TRANSISTOR	2SA1235-F
	Q691	8-729-026-39	TRANSISTOR	2SA933AS-QT

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
	RESISTOR				
R84	1-249-377-11	CARBON	0.47	5%	1/4W
R085	1-215-924-00	METAL OXIDE	15K	5%	3W
R086	1-216-839-11	METAL CHIP	33K	5%	1/10W
R087	1-216-837-11	METAL CHIP	22K	5%	1/10W
R089	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R099	1-216-809-11	METAL CHIP	100	5%	1/10W
R102	1-216-864-11	SHORT CHIP			
R107	1-216-809-11	METAL CHIP	100	5%	1/10W
R108	1-216-809-11	METAL CHIP	100	5%	1/10W
R202	1-216-813-11	METAL CHIP	220	5%	1/10W
R206	1-216-813-11	METAL CHIP	220	5%	1/10W
R207	1-216-845-11	METAL CHIP	100K	5%	1/10W
R208	1-216-813-11	METAL CHIP	220	5%	1/10W
R209	1-216-845-11	METAL CHIP	100K	5%	1/10W
R210	1-216-813-11	METAL CHIP	220	5%	1/10W
R217	1-216-845-11	METAL CHIP	100K	5%	1/10W
R218	1-216-845-11	METAL CHIP	100K	5%	1/10W
R219	1-216-813-11	METAL CHIP	220	5%	1/10W
R220	1-216-813-11	METAL CHIP	220	5%	1/10W
R222	1-216-845-11	METAL CHIP	100K	5%	1/10W
R223	1-216-813-11	METAL CHIP	220	5%	1/10W
R224	1-216-813-11	METAL CHIP	220	5%	1/10W
R225	1-216-845-11	METAL CHIP	100K	5%	1/10W
R232	1-216-853-11	METAL CHIP	470K	5%	1/10W
R233	1-216-853-11	METAL CHIP	470K	5%	1/10W
R234	1-216-813-11	METAL CHIP	220	5%	1/10W
R235	1-216-813-11	METAL CHIP	220	5%	1/10W
R301	1-216-809-11	METAL CHIP	100	5%	1/10W
R302	1-218-839-11	METAL CHIP	470	0.50%	1/10W
R303	1-218-841-11	METAL CHIP	560	0.50%	1/10W
R328	1-216-833-11	METAL CHIP	10K	5%	1/10W
R334	1-216-809-11	METAL CHIP	100	5%	1/10W
R335	1-216-821-11	METAL CHIP	1K	5%	1/10W
R359	1-216-833-11	METAL CHIP	10K	5%	1/10W
R367	1-216-864-11	SHORT CHIP			
R369	1-216-864-11	SHORT CHIP			
R390	1-216-813-11	METAL CHIP	220	5%	1/10W
R391	1-218-285-11	METAL CHIP	75	5%	1/10W
R393	1-218-285-11	METAL CHIP	75	5%	1/10W
R394	1-216-813-11	METAL CHIP	220	5%	1/10W
R395	1-216-813-11	METAL CHIP	220	5%	1/10W
R396	1-216-813-11	METAL CHIP	220	5%	1/10W
R397	1-216-813-11	METAL CHIP	220	5%	1/10W
R398	1-216-813-11	METAL CHIP	220	5%	1/10W
R400	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R401	1-216-809-11	METAL CHIP	100	5%	1/10W
R403	1-247-807-31	CARBON	100	5%	1/4W
R405	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R408	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R411	1-249-393-11	CARBON	10	5%	1/4W
R416	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R422	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R424	1-216-821-11	METAL CHIP	1K	5%	1/10W
R425	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R429	1-216-841-11	METAL CHIP	47K	5%	1/10W
R477	1-216-819-11	METAL CHIP	680	5%	1/10W
R478	1-216-833-11	METAL CHIP	10K	5%	1/10W
R479	1-216-821-11	METAL CHIP	1K	5%	1/10W
R500	1-216-813-11	METAL CHIP	220	5%	1/10W
R502	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R503	1-249-425-11	CARBON	4.7K	5%	1/4W
R504	1-216-365-00 (KV-21FA315/21FA515 ONLY)	METAL OXIDE	0.47	5%	2W
R504	1-243-608-71 (KV-29FA315/29FA515 ONLY)	METAL OXIDE	1.5K	5%	3W
R506	1-243-683-71	METAL OXIDE	47	5%	1W
R507	1-249-401-11 (KV-29FA315/29FA515 ONLY)	CARBON	47	5%	1/4W
R508	1-216-833-11	METAL CHIP	10K	5%	1/10W
R509	1-260-320-11 (KV-21FA315/21FA515 ONLY)	CARBON	220	5%	1/2W
R509	1-260-328-11 (KV-29FA315/29FA515 ONLY)	CARBON	1K	5%	1/2W
⚠ R510	1-215-886-11 (KV-21FA315/21FA515 ONLY)	METAL OXIDE	100	5%	2W
⚠ R510	1-215-908-00 (KV-29FA315/29FA515 ONLY)	METAL OXIDE	33	5%	3W
R512	1-215-910-00 (KV-21FA315/21FA515 ONLY)	METAL OXIDE	68	5%	3W
R512	1-243-531-71 (KV-29FA315/29FA515 ONLY)	METAL OXIDE	100	5%	3W
R513	1-216-841-11	METAL CHIP	47K	5%	1/10W

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

A component identified by this ⋈ symbol indicates that it has been carefully factory-selected to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

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	REF. NO.	PART NO.	DESCRIPTION	VALUES		
	R514	1-216-833-11	METAL CHIP	10K	5%	1/10W
	R517	1-249-415-11	CARBON	680	5%	1/4W
	R518	1-216-833-11	METAL CHIP	10K	5%	1/10W
	R519	1-249-411-11	CARBON	330	5%	1/4W
	R520	1-243-531-71	METAL OXIDE	100	5%	3W
		(KV-29FA315/29FA515 ONLY)				
	R521	1-216-815-11	METAL CHIP	330	5%	1/10W
⚠	R523	1-218-873-11	METAL CHIP	12K	0.50%	1/10W
		(KV-21FA315/21FA515 ONLY)				
⚠	R523	1-218-879-11	METAL CHIP	22K	0.50%	1/10W
		(KV-29FA315/29FA515 ONLY)				
⚠	R524	1-216-833-11	METAL CHIP	10K	5%	1/10W
⚠	R525	1-218-869-11	METAL CHIP	8.2K	0.50%	1/10W
⚠	R528	1-218-853-11	METAL CHIP	1.8K	0.50%	1/10W
		(KV-21FA315/21FA515 ONLY)				
⚠	R528	1-218-879-11	METAL CHIP	22K	0.50%	1/10W
		(KV-29FA315/29FA515 ONLY)				
	R529	1-218-895-11	METAL CHIP	100K	0.50%	1/10W
		(KV-21FA315/21FA515 ONLY)				
	R529	1-218-879-11	METAL CHIP	22K	0.50%	1/10W
		(KV-29FA315/29FA515 ONLY)				
⋈	R530	1-218-716-11	METAL CHIP	10K	0.50%	1/10W
		(KV-21FA315/21FA515 ONLY)				
⋈	R530	1-218-873-11	METAL CHIP	12K	0.50%	1/10W
		(KV-29FA315/29FA515 ONLY)				
⋈	R531	1-218-883-11	METAL CHIP	33K	0.50%	1/10W
		(KV-21FA315/21FA515 ONLY)				
⋈	R531	1-218-901-11	METAL CHIP	180K	0.50%	1/10W
		(KV-29FA315/29FA515 ONLY)				
	R532	1-216-810-11	METAL CHIP	120	5%	1/10W
	R533	1-215-879-11	METAL OXIDE	47K	5%	1W
	R534	1-216-833-11	METAL CHIP	10K	5%	1/10W
	R535	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
⚠	R536	1-260-288-11	CARBON	0.47	5%	1/2W
⚠	R537	1-260-288-11	CARBON	0.47	5%	1/2W
	R538	1-247-887-00	CARBON	220K	5%	1/4W
	R541	1-216-841-11	METAL CHIP	47K	5%	1/10W
	R542	1-216-833-11	METAL CHIP	10K	5%	1/10W
⚠	R543	1-249-377-11	CARBON	0.47	5%	1/4W

	REF. NO.	PART NO.	DESCRIPTION	VALUES		
	R544	1-216-821-11	METAL CHIP	1K	5%	1/10W
⚠	R545	1-249-387-11	CARBON	3.3	5%	1/4W
	R546	1-215-453-00	METAL	22K	1%	1/4W
	R547	1-215-453-00	METAL	22K	1%	1/4W
		(KV-21FA315/21FA515 ONLY)				
	R547	1-215-445-00	METAL	10K	1%	1/4W
		(KV-29FA315/29FA515 ONLY)				
	R548	1-215-453-00	METAL	22K	1%	1/4W
	R549	1-215-429-00	METAL	2.2K	1%	1/4W
⚠	R550	1-249-377-11	CARBON	0.47	5%	1/4W
		(KV-29FA315/29FA515 ONLY)				
	R551	1-215-873-00	METAL OXIDE	4.7K	5%	1W
		(KV-29FA315/29FA515 ONLY)				
	R552	1-215-921-11	METAL OXIDE	4.7K	5%	3W
		(KV-21FA315/21FA515 ONLY)				
	R552	1-243-608-71	METAL OXIDE	1.5K	5%	3W
		(KV-29FA315/29FA515 ONLY)				
⚠	R553	1-249-377-11	CARBON	0.47	5%	1/4W
	R559	1-216-805-11	METAL CHIP	47	5%	1/10W
	R561	1-215-445-00	METAL	10K	1%	1/4W
⚠	R563	1-216-351-00	METAL OXIDE	1.5	5%	1W
		(KV-21FA315/21FA515 ONLY)				
⚠	R563	1-214-798-21	METAL	1.8	1%	1/2W
		(KV-29FA315/29FA515 ONLY)				
	R564	1-247-895-91	CARBON	470K	5%	1/4W
	R565	1-215-889-00	METAL OXIDE	330	5%	2W
	R566	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
⚠	R567	1-249-385-11	CARBON	2.2	5%	1/4W
	R568	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
	R569	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
	R570	1-216-833-11	METAL CHIP	10K	5%	1/10W
	R571	1-216-833-11	METAL CHIP	10K	5%	1/10W
	R572	1-216-833-11	METAL CHIP	10K	5%	1/10W
	R573	1-218-873-11	METAL CHIP	12K	0.50%	1/10W
⚠	R574	1-214-798-21	METAL	1.8	1%	1/2W
		(KV-29FA315/29FA515 ONLY)				
	R576	1-243-535-71	METAL OXIDE	220	5%	3W
		(KV-21FA315/21FA515 ONLY)				
	R576	1-243-523-71	METAL OXIDE	22	5%	3W
		(KV-29FA315/29FA515 ONLY)				

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
R580	1-216-845-11	METAL CHIP	100K	5%	1/10W
R583	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R584	1-249-429-11	CARBON	10K	5%	1/4W
R586	1-216-843-11	METAL CHIP	68K	5%	1/10W
R589	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R590	1-216-833-11	METAL CHIP	10K	5%	1/10W
R591	1-249-377-11	CARBON	0.47	5%	1/4W
	(KV-21FA315/21FA515 ONLY)				
R592	1-243-803-71	METAL OXIDE	0.33	5%	1W
R593	1-249-417-11	CARBON	1K	5%	1/4W
R594	1-249-429-11	CARBON	10K	5%	1/4W
R595	1-247-891-00	CARBON	330K	5%	1/4W
R596	1-249-441-11	CARBON	100K	5%	1/4W
R597	1-216-864-11	SHORT CHIP			
R598	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R599	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
⚠ R603	1-219-513-11	METAL	4.7M	5%	1/2W
	(KV-21FA315/21FA515/29FA315/29FA515 LATIN NORTH ONLY)				
R604	1-216-821-11	METAL CHIP	1K	5%	1/10W
R606	1-216-833-11	METAL CHIP	10K	5%	1/10W
R607	1-216-833-11	METAL CHIP	10K	5%	1/10W
R608	1-216-833-11	METAL CHIP	10K	5%	1/10W
R609	1-216-389-11	METAL OXIDE	1	5%	3W
R610	1-216-833-11	METAL CHIP	10K	5%	1/10W
R611	1-216-833-11	METAL CHIP	10K	5%	1/10W
R612	1-260-131-11	CARBON	470K	5%	1/2W
R613	1-216-833-11	METAL CHIP	10K	5%	1/10W
⚠ R615	1-202-933-61	FUSIBLE	0.1	10%	1/2W
R616	1-216-822-11	METAL CHIP	1.2K	5%	1/10W
R617	1-216-821-11	METAL CHIP	1K	5%	1/10W
R618	1-216-864-11	SHORT CHIP			
R619	1-249-377-11	CARBON	0.47	5%	1/4W
R620	1-215-857-11	METAL OXIDE	10	5%	1W
R625	1-216-817-11	METAL CHIP	470	5%	1/10W
R626	1-218-869-11	METAL CHIP	8.2K	0.50%	1/10W
R628	1-260-131-11	CARBON	470K	5%	1/2W
R629	1-245-478-21	METAL	470K	1%	1/4W
R630	1-245-478-21	METAL	470K	1%	1/4W
R631	1-218-875-11	METAL CHIP	15K	0.50%	1/10W
R632	1-218-823-11	METAL CHIP	100	0.50%	1/10W
R640	1-249-417-11	CARBON	1K	5%	1/4W
R641	1-216-389-11	METAL OXIDE	1	5%	3W
R647	1-211-992-11	METAL CHIP	91	0.50%	1/10W

REF. NO.	PART NO.	DESCRIPTION	VALUES		
R648	1-216-864-11	SHORT CHIP			
R650	1-216-845-11	METAL CHIP	100K	5%	1/10W
R651	1-216-845-11	METAL CHIP	100K	5%	1/10W
R658	1-249-393-11	CARBON	10	5%	1/4W
R659	1-249-393-11	CARBON	10	5%	1/4W
R660	1-216-833-11	METAL CHIP	10K	5%	1/10W
R661	1-249-415-11	CARBON	680	5%	1/4W
R667	1-216-833-11	METAL CHIP	10K	5%	1/10W
⚠ R668	1-249-413-11	CARBON	470	5%	1/4W
R670	1-216-833-11	METAL CHIP	10K	5%	1/10W
R671	1-243-979-71	METAL OXIDE	0.1	5%	2W
R672	1-243-979-71	METAL OXIDE	0.1	5%	2W
⚠ R674	1-220-926-11	FUSIBLE	0.47	10%	1/2W
R681	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R686	1-240-303-31	CEMENTED	0.22	5%	10W
R687	1-220-797-11	CEMENTED	0.47	5%	10W
R688	1-240-303-31	CEMENTED	0.22	5%	10W
R691	1-216-837-11	METAL CHIP	22K	5%	1/10W
R692	1-216-837-11	METAL CHIP	22K	5%	1/10W
R694	1-216-837-11	METAL CHIP	22K	5%	1/10W
R698	1-247-289-00	METAL	8.2M	5%	1W
	(KV-21FA315/21FA515/29FA315/29FA515 LATIN SOUTH ONLY)				
R1510	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1511	1-216-833-11	METAL CHIP	10K	5%	1/10W

RELAY

RY501	1-755-198-11	RELAY, AC POWER
⚠ RY600	1-755-395-11	RELAY (AC POWER)

SWITCH

S501	1-572-707-11	SWITCH, LEVER
S502	1-572-707-11	SWITCH, LEVER
	(KV-29FA315/29FA515 ONLY)	

TRANSFORMER

T501	1-433-836-11	TRANSFORMER, HORIZONTAL DRIVE
⚠ T502	1-435-869-11	TRANFORMER, FERRITE (PMT)
	(KV-29FA315/29FA515 ONLY)	

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

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REF. NO.	PART NO.	DESCRIPTION	VALUES
⚠ T503	1-453-316-21	FBT ASSY NX-1748//X4A4 (KV-21FA315/21FA515 ONLY)	
⚠ T503	1-453-310-11	FBT ASSY NX-4521//X4J4 (KV-29FA315/29FA515 ONLY)	
⚠ T505	1-435-079-21	TRANSFORMER, HORIZONTAL LINEAR (KV-21FA315/21FA515 ONLY)	
⚠ T505	1-433-850-11	TRANSFORMER, HORIZONTAL LINEAR (KV-29FA315/29FA515 ONLY)	
⚠ T602	1-443-402-11	TRANSFORMER, LINE FILTER	
⚠ T603	1-437-783-11	TRANSFORMER, STANDBY (KV-21FA315/21FA515/29FA315/29FA515 LATIN NORTH ONLY)	
⚠ T603	1-439-854-11	TRANSFORMER, STANDBY (KV-21FA315/21FA515/29FA315/29FA515 LATIN SOUTH ONLY)	
⚠ T604	1-443-766-11	CONVERTER TRANSFORMER	
⚠ T605	1-443-402-11	TRANSFORMER, LINE FILTER	
	THERMISTOR		
TH501	1-800-193-00	THERMISTOR	
THP501	1-809-539-11	THERMISTOR, POSITIVE (KV-21FA315/21FA515 LATIN NORTH ONLY)	
THP501	1-803-540-11	THERMISTOR (KV-21FA315/21FA515/29FA315/29FA515 LATIN SOUTH ONLY)	
THP501	1-803-970-11	THERMISTOR, POSITIVE (KV-29FA315/29FA515 LATIN NORTH ONLY)	
	TUNER		
⚠ TU001	8-598-593-70	TUNER, FSS BTF-WA421	
	VARISTOR		
⚠ VDR600	1-810-974-21	VARISTOR (KV-21FA315/21FA515/29FA315/29FA515 LATIN NORTH ONLY)	
⚠ VDR600	1-804-995-11	VARISTOR (KV-21FA315/21FA515/29FA315/29FA515 LATIN SOUTH ONLY)	

K

A-1098-868-A K (COM) BOARD, MOUNTED (KV-21FA315/29FA315 ONLY)
A-1098-869-A K (VAR) BOARD, MOUNTED (KV-21FA515/29FA515 ONLY)
4-382-854-11 SCREW (M3X10), P, SW (+)

CAPACITOR

C2401	1-137-194-81	FILM (KV-21FA315/21FA515 ONLY)	0.47µF	5%	50V
C2402	1-137-194-81	FILM (KV-21FA315/21FA515 ONLY)	0.47µF	5%	50V
C2404	1-104-665-11	ELECT	100µF	20%	25V
C2405	1-130-495-00	MYLAR	0.1µF	5%	50V
C2406	1-128-550-11	ELECT	2200µF	20%	50V
C2407	1-126-952-11	ELECT	1000µF	20%	35V
C2408	1-126-952-11	ELECT	1000µF	20%	35V
C2409	1-137-194-81	FILM	0.47µF	5%	50V
C2410	1-126-960-11	ELECT	1µF	20%	50V
C2412	1-104-665-11	ELECT	100µF	20%	25V
C2413	1-130-495-00	MYLAR	0.1µF	5%	50V
C2414	1-128-550-11	ELECT	2200µF	20%	50V
C2415	1-126-952-11	ELECT	1000µF	20%	35V
C2416	1-128-550-11	ELECT	2200µF	20%	50V
C2417	1-137-194-81	FILM (KV-29FA315/29FA515 ONLY)	0.47µF	5%	50V
C2419	1-104-665-11	ELECT (KV-29FA315/29FA515 ONLY)	100µF	20%	25V
C2420	1-130-495-00	MYLAR (KV-29FA315/29FA515 ONLY)	0.1µF	5%	50V
C2421	1-128-550-11	ELECT (KV-29FA315/29FA515 ONLY)	2200µF	20%	50V
C2422	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V
C2423	1-164-227-11	CERAMIC CHIP	0.022µF	10%	25V
C2424	1-164-227-11	CERAMIC CHIP	0.022µF	10%	25V
C2425	1-164-227-11	CERAMIC CHIP	0.022µF	10%	25V
C2426	1-164-227-11	CERAMIC CHIP	0.022µF	10%	25V
C2429	1-126-964-11	ELECT	10µF	20%	50V
C2430	1-126-964-11	ELECT	10µF	20%	50V
C2431	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V
C2432	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C2433	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
C2435	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V
C2436	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V
C2437	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V
C2438	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V
C2439	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V
C2440	1-126-964-11	ELECT	10µF	20%	50V
C2441	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V
C2442	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C2443	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V
C2444	1-126-964-11	ELECT	10µF	20%	50V
C2445	1-104-665-11	ELECT	100µF	20%	25V
C2446	1-104-665-11	ELECT	100µF	20%	25V
C2448	1-126-960-11	ELECT	1µF	20%	50V
C2450	1-126-960-11	ELECT	1µF	20%	50V
C2451	1-130-495-00	MYLAR	0.1µF	5%	50V
C2452	1-126-961-11	ELECT	2.2µF	20%	50V
C2453	1-126-960-11	ELECT	1µF	20%	50V
C2454	1-126-960-11	ELECT	1µF	20%	50V
C2455	1-126-961-11	ELECT	2.2µF	20%	50V
C2456	1-130-495-00	MYLAR	0.1µF	5%	50V
C2457	1-104-665-11	ELECT	100µF	20%	25V
C2458	1-126-961-11	ELECT	2.2µF	20%	50V
C2459	1-126-961-11	ELECT	2.2µF	20%	50V
C2460	1-104-665-11	ELECT	100µF	20%	25V
C2461	1-126-961-11	ELECT	2.2µF	20%	50V
C2462	1-126-961-11	ELECT	2.2µF	20%	50V
C2463	1-104-665-11	ELECT	100µF	20%	25V
C2464	1-126-961-11	ELECT	2.2µF	20%	50V
C2465	1-126-960-11	ELECT	1µF	20%	50V
C2466	1-130-495-00	MYLAR	0.1µF	5%	50V
C2467	1-126-961-11	ELECT	2.2µF	20%	50V
C2468	1-126-960-11	ELECT	1µF	20%	50V
C2469	1-126-961-11	ELECT	2.2µF	20%	50V
C2470	1-162-968-11	CERAMIC CHIP	0.0047µF	10%	50V
C2471	1-162-968-11	CERAMIC CHIP	0.0047µF	10%	50V
C2472	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C2473	1-126-964-11	ELECT	10µF	20%	50V
C2474	1-126-964-11	ELECT	10µF	20%	50V
C2475	1-126-968-11	ELECT	100µF	20%	50V
C2476	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V

REF. NO.	PART NO.	DESCRIPTION	VALUES		
C2477	1-126-947-11	ELECT	47µF	20%	35V
C2478	1-162-968-11	CERAMIC CHIP	0.0047µF	10%	50V
C2479	1-104-665-11	ELECT	100µF	20%	25V
C2480	1-126-947-11	ELECT	47µF	20%	35V
C2481	1-162-968-11	CERAMIC CHIP	0.0047µF	10%	50V
C2482	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C2483	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C2484	1-126-947-11	ELECT	47µF	20%	35V
C2486	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C2487	1-127-715-91	CERAMIC CHIP	0.22µF	10%	16V
C2488	1-162-968-11	CERAMIC CHIP	0.0047µF	10%	50V
C2489	1-127-715-91	CERAMIC CHIP	0.22µF	10%	16V
C2490	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C2491	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C2492	1-162-966-11	CERAMIC CHIP	0.0022µF	10%	50V
C2493	1-126-952-11	ELECT	1000µF	20%	35V
	(KV-29FA315/29FA515 ONLY)				
C2494	1-126-952-11	ELECT	1000µF	20%	35V
	(KV-29FA315/29FA515 ONLY)				
C2495	1-126-964-11	ELECT	10µF	20%	50V
C2496	1-104-665-11	ELECT	100µF	20%	25V
C2498	1-126-947-11	ELECT	47µF	20%	35V
C2499	1-126-947-11	ELECT	47µF	20%	35V
C2500	1-162-966-11	CERAMIC CHIP	0.0022µF	10%	50V
C2501	1-137-372-11	MYLAR	0.022µF	5%	50V
C2503	1-137-372-11	MYLAR	0.022µF	5%	50V
C2504	1-162-966-11	CERAMIC CHIP	0.0022µF	10%	50V
C2505	1-126-933-11	ELECT	100µF	20%	16V
C2506	1-126-933-11	ELECT	100µF	20%	16V
C2507	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C2508	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V
C2509	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C2511	1-137-194-81	FILM	0.47µF	5%	50V
	(KV-29FA315/29FA515 ONLY)				
C2514	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C2515	1-126-933-11	ELECT	100µF	20%	16V
C2516	1-162-966-11	CERAMIC CHIP	0.0022µF	10%	50V
C2517	1-162-966-11	CERAMIC CHIP	0.0022µF	10%	50V
C2518	1-162-966-11	CERAMIC CHIP	0.0022µF	10%	50V

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
C2519	1-162-966-11	CERAMIC CHIP	0.0022µF	10%	50V
C2520	1-162-966-11	CERAMIC CHIP	0.0022µF	10%	50V
C2521	1-162-966-11	CERAMIC CHIP	0.0022µF	10%	50V
C2522	1-126-963-11	ELECT	4.7µF	20%	50V
C2523	1-115-412-11	CERAMIC CHIP	680pF	5%	25V
C2524	1-126-963-11	ELECT	4.7µF	20%	50V
C2525	1-115-412-11	CERAMIC CHIP	680pF	5%	25V
C2526	1-126-964-11	ELECT	10µF	20%	50V
C2527	1-126-964-11	ELECT	10µF	20%	50V
	(KV-29FA315/29FA515 ONLY)				
C2528	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V
	(KV-29FA315/29FA515 ONLY)				
C2529	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V
	(KV-29FA315/29FA515 ONLY)				
C2530	1-126-967-11	ELECT	47µF	20%	50V
	(KV-29FA315/29FA515 ONLY)				
C2531	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
	(KV-29FA315/29FA515 ONLY)				
C2532	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V
	(KV-29FA315/29FA515 ONLY)				
C2533	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V
	(KV-29FA315/29FA515 ONLY)				
C2534	1-125-891-11	CERAMIC CHIP	0.47µF	10%	10V
C2535	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C2536	1-126-947-11	ELECT	47µF	20%	35V
C2537	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C2538	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C2539	1-126-947-11	ELECT	47µF	20%	35V
C2540	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C2541	1-126-947-11	ELECT	47µF	20%	35V
C2542	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C2543	1-126-947-11	ELECT	47µF	20%	35V
C2544	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C2545	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C2546	1-126-947-11	ELECT	47µF	20%	35V
C2547	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C2548	1-126-947-11	ELECT	47µF	20%	35V
C2549	1-126-947-11	ELECT	47µF	20%	35V
C2550	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C2551	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C2552	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C2553	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V

REF. NO.	PART NO.	DESCRIPTION	VALUES		
C2554	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C2555	1-137-372-11	MYLAR	0.022µF	5%	50V
C2556	1-137-372-11	MYLAR	0.022µF	5%	50V
C2557	1-137-372-11	MYLAR	0.022µF	5%	50V
	(KV-29FA315/29FA515 ONLY)				
C2558	1-137-372-11	MYLAR	0.022µF	5%	50V
	(KV-29FA315/29FA515 ONLY)				
C2559	1-126-964-11	ELECT	10µF	20%	50V
C2560	1-126-964-11	ELECT	10µF	20%	50V
C2561	1-126-964-11	ELECT	10µF	20%	50V
	(KV-29FA315/29FA515 ONLY)				
C2633	1-126-940-11	ELECT	330µF	20%	25V
C2634	1-115-416-11	CERAMIC CHIP	0.001µF	5%	25V
C2635	1-104-665-11	ELECT	100µF	20%	25V
C2650	1-126-940-11	ELECT	330µF	20%	25V
C2651	1-115-416-11	CERAMIC CHIP	0.001µF	5%	25V
C2652	1-126-947-11	ELECT	47µF	20%	35V
C2690	1-126-940-11	ELECT	330µF	20%	25V
C2691	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C2692	1-104-665-11	ELECT	100µF	20%	25V

CONNECTOR

*	CN2400	1-564-507-11	PLUG, CONNECTOR	4P
*	CN2401	1-564-511-11	PLUG, CONNECTOR	8P
*	CN2402	1-564-506-11	PLUG, CONNECTOR	3P
*	CN2405	1-564-506-11	PLUG, CONNECTOR	3P
*	CN2600	1-564-508-11	PLUG, CONNECTOR	5P

DIODE

D2401	8-719-070-60	DIODE	PDZ7.5B-115
D2404	8-719-070-60	DIODE	PDZ7.5B-115
D2405	8-719-070-60	DIODE	PDZ7.5B-115
	(KV-29FA315/29FA515 ONLY)		
D2406	8-719-070-60	DIODE	PDZ7.5B-115
D2407	8-719-070-60	DIODE	PDZ7.5B-115
D2408	8-719-072-68	DIODE	PDZ13B-115
D2409	8-719-072-66	DIODE	PDZ11B-115
D2415	8-719-404-50	DIODE	MA111-TX
D2416	8-719-404-50	DIODE	MA111-TX
D2417	8-719-404-50	DIODE	MA111-TX
	(KV-29FA315/29FA515 ONLY)		

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REF. NO.	PART NO.	DESCRIPTION	VALUES
	FERRITE BEAD		
FB2401	1-414-229-11	FERRITE	0µH
FB2402	1-414-229-11	FERRITE	0µH
FB2404	1-414-229-11	FERRITE	0µH
FB2405	1-414-229-11	FERRITE	0µH
FB2406	1-414-229-11	FERRITE	0µH
	IC		
IC2401	6-708-187-01	IC	M62320-FP
IC2404	6-805-588-01	IC	TC94A48FG-003(S.D)
IC2405	8-759-686-15	IC	NJM2180M (TE2)
IC2406	6-708-185-01	IC	NJW1151M-TE2
IC2407	8-759-331-71	IC	NJM4558E(TE2)
IC2408	8-759-331-71	IC	NJM4558E(TE2)
IC2409	8-759-331-71	IC	NJM4558E(TE2)
IC2410	8-759-394-57	IC	PST593C-MMP-4P
IC2411	6-708-186-01	IC	TDA2616Q
IC2412	6-708-186-01	IC	TDA2616Q
IC2413	6-708-186-01 (KV-29FA315/29FA515 ONLY)	IC	TDA2616Q
IC2414	8-759-685-70 (KV-29FA315/29FA515 ONLY)	IC	NJM2520M(TE2)
IC2415	8-759-685-70 (KV-29FA315/29FA515 ONLY)	IC	NJM2520M(TE2)
IC2633	8-759-641-26	IC	NJM2391DL1-33(TE1)
IC2650	8-759-533-85	IC	L88M05T-FA-TL
IC2690	6-705-466-01	IC	BA90BC0T
	JACK		
J2401	1-780-276-11 (KV-29FA315/29FA515 ONLY)	TERMINAL BOARD	
	CHIP CONDUCTOR		
JR2691	1-216-864-11	SHORT CHIP	
JR2692	1-216-864-11	SHORT CHIP	
	COIL		
L2402	1-412-537-31	INDUCTOR	100µH
L2403	1-412-537-31	INDUCTOR	100µH
L2404	1-412-537-31	INDUCTOR	100µH
L2600	1-412-521-31	INDUCTOR	4.7µH
L2601	1-412-521-31	INDUCTOR	4.7µH

REF. NO.	PART NO.	DESCRIPTION	VALUES		
	IC LINK				
PS2401	1-576-337-21	IC LINK	2.7A		50V
PS2402	1-576-337-21	IC LINK	2.7A		50V
PS2403	1-576-337-21 (KV-29FA315/29FA515 ONLY)	IC LINK	2.7A		50V
	TRANSISTOR				
Q2400	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q2401	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q2402	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q2403	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q2404	8-729-120-28 (KV-29FA315/29FA515 ONLY)	TRANSISTOR	2SC1623-L5L6		
Q2405	8-729-120-28 (KV-29FA315/29FA515 ONLY)	TRANSISTOR	2SC1623-L5L6		
Q2406	8-729-120-28 (KV-29FA315/29FA515 ONLY)	TRANSISTOR	2SC1623-L5L6		
Q2407	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q2408	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q2409	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q2410	8-729-120-28 (KV-29FA315/29FA515 ONLY)	TRANSISTOR	2SC1623-L5L6		
Q2411	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
	RESISTOR				
R2401	1-216-809-11	METAL CHIP	100	5%	1/10W
R2402	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2403	1-216-809-11	METAL CHIP	100	5%	1/10W
R2404	1-216-845-11	METAL CHIP	100K	5%	1/10W
R2405	1-216-809-11	METAL CHIP	100	5%	1/10W
R2406	1-216-809-11	METAL CHIP	100	5%	1/10W
R2407	1-216-845-11	METAL CHIP	100K	5%	1/10W
R2408	1-216-809-11 (KV-29FA315/29FA515 ONLY)	METAL CHIP	100	5%	1/10W
R2409	1-216-845-11 (KV-29FA315/29FA515 ONLY)	METAL CHIP	100K	5%	1/10W
R2410	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R2411	1-216-821-11	METAL CHIP	1K	5%	1/10W
R2412	1-216-864-11	SHORT CHIP			
R2413	1-216-864-11	SHORT CHIP			
R2414	1-216-864-11	SHORT CHIP			

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REF. NO.	PART NO.	DESCRIPTION	VALUES		
R2415	1-216-809-11	METAL CHIP	100	5%	1/10W
R2416	1-216-809-11	METAL CHIP	100	5%	1/10W
R2417	1-216-809-11	METAL CHIP	100	5%	1/10W
R2418	1-216-809-11	METAL CHIP	100	5%	1/10W
R2419	1-216-845-11	METAL CHIP	100K	5%	1/10W
R2420	1-216-809-11	METAL CHIP	100	5%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R2421	1-216-845-11	METAL CHIP	100K	5%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R2422	1-216-797-11	METAL CHIP	10	5%	1/10W
R2423	1-216-805-11	METAL CHIP	47	5%	1/10W
R2424	1-216-797-11	METAL CHIP	10	5%	1/10W
R2425	1-216-805-11	METAL CHIP	47	5%	1/10W
R2426	1-216-797-11	METAL CHIP	10	5%	1/10W
R2427	1-216-805-11	METAL CHIP	47	5%	1/10W
R2428	1-216-797-11	METAL CHIP	10	5%	1/10W
R2429	1-216-805-11	METAL CHIP	47	5%	1/10W
R2430	1-216-797-11	METAL CHIP	10	5%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R2431	1-216-805-11	METAL CHIP	47	5%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R2432	1-216-864-11	SHORT CHIP			
R2433	1-216-797-11	METAL CHIP	10	5%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R2435	1-216-805-11	METAL CHIP	47	5%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R2440	1-216-837-11	METAL CHIP	22K	5%	1/10W
R2441	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2442	1-216-821-11	METAL CHIP	1K	5%	1/10W
R2443	1-216-841-11	METAL CHIP	47K	5%	1/10W
R2457	1-216-864-11	SHORT CHIP			
R2458	1-216-861-11	METAL CHIP	2.2M	5%	1/10W
R2461	1-216-839-11	METAL CHIP	33K	5%	1/10W
R2462	1-218-296-11	METAL CHIP	75K	5%	1/10W
R2463	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R2464	1-218-331-11	METAL CHIP	51K	5%	1/10W
R2465	1-216-824-11	METAL CHIP	1.8K	5%	1/10W
R2466	1-218-866-11	METAL CHIP	6.2K	0.50%	1/10W
R2467	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2468	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2469	1-216-833-11	METAL CHIP	10K	5%	1/10W

REF. NO.	PART NO.	DESCRIPTION	VALUES		
R2470	1-216-840-11	METAL CHIP	39K	5%	1/10W
R2471	1-216-824-11	METAL CHIP	1.8K	5%	1/10W
R2472	1-218-331-11	METAL CHIP	51K	5%	1/10W
R2473	1-216-861-11	METAL CHIP	2.2M	5%	1/10W
R2474	1-216-839-11	METAL CHIP	33K	5%	1/10W
R2475	1-218-296-11	METAL CHIP	75K	5%	1/10W
R2480	1-218-331-11	METAL CHIP	51K	5%	1/10W
R2481	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R2482	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2484	1-216-828-11	METAL CHIP	3.9K	5%	1/10W
R2485	1-216-821-11	METAL CHIP	1K	5%	1/10W
R2486	1-216-821-11	METAL CHIP	1K	5%	1/10W
R2487	1-218-717-11	METAL CHIP	11K	0.50%	1/10W
R2488	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2489	1-216-835-11	METAL CHIP	15K	5%	1/10W
R2490	1-216-809-11	METAL CHIP	100	5%	1/10W
R2491	1-216-845-11	METAL CHIP	100K	5%	1/10W
R2492	1-216-809-11	METAL CHIP	100	5%	1/10W
R2493	1-216-845-11	METAL CHIP	100K	5%	1/10W
R2495	1-218-292-11	METAL CHIP	20K	5%	1/10W
R2496	1-216-847-11	METAL CHIP	150K	5%	1/10W
R2497	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R2499	1-216-845-11	METAL CHIP	100K	5%	1/10W
R2511	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R2512	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R2513	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R2514	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R2517	1-216-809-11	METAL CHIP	100	5%	1/10W
R2518	1-216-809-11	METAL CHIP	100	5%	1/10W
R2521	1-216-845-11	METAL CHIP	100K	5%	1/10W
R2522	1-216-845-11	METAL CHIP	100K	5%	1/10W
R2523	1-216-809-11	METAL CHIP	100	5%	1/10W
R2525	1-216-809-11	METAL CHIP	100	5%	1/10W
R2528	1-216-809-11	METAL CHIP	100	5%	1/10W
R2531	1-216-809-11	METAL CHIP	100	5%	1/10W
R2532	1-216-853-11	METAL CHIP	470K	5%	1/10W
R2533	1-216-821-11	METAL CHIP	1K	5%	1/10W
R2534	1-216-864-11	SHORT CHIP			
R2535	1-216-864-11	SHORT CHIP			
R2536	1-216-845-11	METAL CHIP	100K	5%	1/10W

K

REF. NO.	PART NO.	DESCRIPTION	VALUES		
R2537	1-216-845-11	METAL CHIP	100K	5%	1/10W
R2538	1-216-837-11	METAL CHIP	22K	5%	1/10W
R2539	1-216-851-11	METAL CHIP	330K	5%	1/10W
R2540	1-216-809-11	METAL CHIP	100	5%	1/10W
R2541	1-216-809-11	METAL CHIP	100	5%	1/10W
R2542	1-216-837-11	METAL CHIP	22K	5%	1/10W
R2543	1-216-851-11	METAL CHIP	330K	5%	1/10W
R2544	1-216-821-11	METAL CHIP	1K	5%	1/10W
R2545	1-216-853-11	METAL CHIP	470K	5%	1/10W
R2546	1-216-845-11	METAL CHIP	100K	5%	1/10W
R2547	1-216-845-11	METAL CHIP	100K	5%	1/10W
R2548	1-216-837-11	METAL CHIP	22K	5%	1/10W
R2549	1-216-809-11	METAL CHIP	100	5%	1/10W
R2550	1-216-851-11	METAL CHIP	330K	5%	1/10W
R2551	1-216-853-11	METAL CHIP	470K	5%	1/10W
R2552	1-216-821-11	METAL CHIP	1K	5%	1/10W
R2553	1-216-853-11	METAL CHIP	470K	5%	1/10W
R2554	1-216-821-11	METAL CHIP	1K	5%	1/10W
R2555	1-216-851-11	METAL CHIP	330K	5%	1/10W
R2556	1-216-809-11	METAL CHIP	100	5%	1/10W
R2557	1-216-837-11	METAL CHIP	22K	5%	1/10W
R2558	1-216-845-11	METAL CHIP	100K	5%	1/10W
R2559	1-216-845-11	METAL CHIP	100K	5%	1/10W
R2560	1-216-821-11	METAL CHIP	1K	5%	1/10W
R2561	1-216-853-11	METAL CHIP	470K	5%	1/10W
R2562	1-216-851-11	METAL CHIP	330K	5%	1/10W
R2563	1-216-809-11	METAL CHIP	100	5%	1/10W
R2564	1-216-837-11	METAL CHIP	22K	5%	1/10W
R2565	1-216-853-11	METAL CHIP	470K	5%	1/10W
R2566	1-216-821-11	METAL CHIP	1K	5%	1/10W
R2567	1-216-851-11	METAL CHIP	330K	5%	1/10W
R2568	1-216-837-11	METAL CHIP	22K	5%	1/10W
R2569	1-216-809-11	METAL CHIP	100	5%	1/10W
R2572	1-216-814-11	METAL CHIP	270	5%	1/10W
R2573	1-216-814-11	METAL CHIP	270	5%	1/10W
R2576	1-216-814-11	METAL CHIP	270	5%	1/10W
R2577	1-216-814-11	METAL CHIP	270	5%	1/10W
R2578	1-216-814-11	METAL CHIP	270	5%	1/10W
R2581	1-216-814-11	METAL CHIP	270	5%	1/10W
R2582	1-216-857-11	METAL CHIP	1M	5%	1/10W

REF. NO.	PART NO.	DESCRIPTION	VALUES		
R2584	1-216-813-11	METAL CHIP	220	5%	1/10W
R2586	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R2587	1-216-845-11	METAL CHIP	100K	5%	1/10W
R2589	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R2590	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R2591	1-216-833-11	METAL CHIP	10K	5%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R2592	1-216-864-11	SHORT CHIP			
R2593	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R2594	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2595	1-216-864-11	SHORT CHIP			
R2597	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R2598	1-216-789-11	METAL CHIP	2.2	5%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R2601	1-216-841-11	METAL CHIP	47K	5%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R2602	1-216-833-11	METAL CHIP	10K	5%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R2604	1-216-841-11	METAL CHIP	47K	5%	1/10W
R2605	1-216-841-11	METAL CHIP	47K	5%	1/10W
R2606	1-216-821-11	METAL CHIP	1K	5%	1/10W
R2607	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R2608	1-216-837-11	METAL CHIP	22K	5%	1/10W
R2610	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2611	1-216-864-11	SHORT CHIP			
R2612	1-216-821-11	METAL CHIP	1K	5%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R2613	1-216-841-11	METAL CHIP	47K	5%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R2614	1-216-841-11	METAL CHIP	47K	5%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R2615	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R2616	1-216-864-11	SHORT CHIP			
	(KV-29FA315/29FA515 ONLY)				
R2617	1-216-837-11	METAL CHIP	22K	5%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R2619	1-216-833-11	METAL CHIP	10K	5%	1/10W
	(KV-29FA315/29FA515 ONLY)				

K MT

REF. NO.	PART NO.	DESCRIPTION	VALUES		
R2620	1-216-841-11	METAL CHIP	47K	5%	1/10W
R2621	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2622	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R2623	1-216-837-11	METAL CHIP	22K	5%	1/10W
R2624	1-216-841-11	METAL CHIP	47K	5%	1/10W
R2633	1-216-399-00	METAL OXIDE	6.8	5%	3W
R2651	1-216-399-00	METAL OXIDE	6.8	5%	3W
R2652	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2653	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2654	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2655	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2656	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2657	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2658	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2659	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2660	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2661	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2662	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2663	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2664	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2665	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2666	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2667	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2668	1-216-833-11 (KV-29FA315/29FA515 ONLY)	METAL CHIP	10K	5%	1/10W
R2669	1-216-833-11 (KV-29FA315/29FA515 ONLY)	METAL CHIP	10K	5%	1/10W
R2670	1-216-833-11 (KV-29FA315/29FA515 ONLY)	METAL CHIP	10K	5%	1/10W
R2671	1-216-833-11 (KV-29FA315/29FA515 ONLY)	METAL CHIP	10K	5%	1/10W
R2672	1-216-833-11 (KV-29FA315/29FA515 ONLY)	METAL CHIP	10K	5%	1/10W
R2673	1-216-833-11 (KV-29FA315/29FA515 ONLY)	METAL CHIP	10K	5%	1/10W
R2674	1-216-833-11 (KV-29FA315/29FA515 ONLY)	METAL CHIP	10K	5%	1/10W
R2675	1-216-833-11 (KV-29FA315/29FA515 ONLY)	METAL CHIP	10K	5%	1/10W
R2677	1-216-821-11	METAL CHIP	1K	5%	1/10W
R2678	1-216-821-11	METAL CHIP	1K	5%	1/10W
R2679	1-216-863-11 (KV-29FA315/29FA515 ONLY)	METAL CHIP	3.3M	5%	1/10W
R2680	1-216-863-11	METAL CHIP	3.3M	5%	1/10W
R2681	1-216-863-11	METAL CHIP	3.3M	5%	1/10W
R2683	1-216-864-11	SHORT CHIP			
R2690	1-216-399-00	METAL OXIDE	6.8	5%	3W

CRYSTAL

X2401	1-781-465-21	VIBRATOR, CRYSTAL			

MT

A-1098-875-A MT (VAR) BOARD, MOUNTED (KV-21FA315/21FA515 ONLY)
A-1098-873-A MT (VAR) BOARD, MOUNTED (KV-29FA315/29FA515 ONLY)

CAPACITOR

C003	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C004	1-162-923-11	CERAMIC CHIP	47pF	5%	50V
C005	1-162-966-11	CERAMIC CHIP	0.0022µF	10%	50V
C006	1-126-767-11	ELECT	1000µF	20%	16V
C007	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C008	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C009	1-164-230-11	CERAMIC CHIP	220pF	5%	50V
C010	1-127-573-11	CERAMIC CHIP	1µF	10%	16V
C011	1-162-964-11	CERAMIC CHIP	0.001µF	10%	50V
C012	1-162-968-11	CERAMIC CHIP	0.0047µF	10%	50V
C014	1-127-573-11	CERAMIC CHIP	1µF	10%	16V
C015	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C019	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C021	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C022	1-126-964-11	ELECT	10µF	20%	50V
C023	1-126-935-11	ELECT	470µF	20%	16V
C033	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C041	1-126-964-11	ELECT	10µF	20%	50V
C047	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C048	1-104-665-11	ELECT	100µF	20%	25V
C064	1-165-176-11	CERAMIC CHIP	0.047µF	10%	16V
C090	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C091	1-126-947-11	ELECT	47µF	20%	35V
C092	1-126-947-11	ELECT	47µF	20%	35V
C094	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C095	1-126-947-11	ELECT	47µF	20%	35V
C096	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C097	1-126-947-11	ELECT	47µF	20%	35V

MT

REF. NO.	PART NO.	DESCRIPTION	VALUES		
C098	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C099	1-126-947-11	ELECT	47µF	20%	35V
C100	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C101	1-126-940-11	ELECT	330µF	20%	25V
C102	1-115-416-11	CERAMIC CHIP	0.001µF	5%	25V
C103	1-126-947-11	ELECT	47µF	20%	35V
C115	1-164-739-11	CERAMIC CHIP	560pF	5%	50V
C116	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C304	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C305	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C306	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C313	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C322	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C325	1-162-967-11	CERAMIC CHIP	0.0033µF	10%	50V
C326	1-164-505-11	CERAMIC CHIP	2.2µF		16V
C330	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C337	1-162-919-11	CERAMIC CHIP	22pF	5%	50V
C351	1-164-315-11	CERAMIC CHIP	470pF	5%	50V
C370	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C390	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C542	1-162-966-11	CERAMIC CHIP	0.0022µF	10%	50V
C551	1-127-573-11	CERAMIC CHIP	1µF	10%	16V
C552	1-124-779-00	ELECT CHIP	10µF	20%	16V
C559	1-216-864-11	SHORT CHIP			
C601	1-126-963-11	ELECT	4.7µF	20%	50V
C665	1-104-665-11	ELECT	100µF	20%	25V
C666	1-104-665-11	ELECT	100µF	20%	25V
C701	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C702	1-126-947-11	ELECT	47µF	20%	35V
C3049	1-127-573-11	CERAMIC CHIP	1µF	10%	16V
C3051	1-126-964-11	ELECT	10µF	20%	50V
C3052	1-164-230-11	CERAMIC CHIP	220pF	5%	50V
C3053	1-165-176-11	CERAMIC CHIP	0.047µF	10%	16V
C3054	1-127-573-11	CERAMIC CHIP	1µF	10%	16V
C3057	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C3307	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C3509	1-124-779-00	ELECT CHIP	10µF	20%	16V
C3511	1-126-964-11	ELECT	10µF	20%	50V
C3519	1-165-176-11	CERAMIC CHIP	0.047µF	10%	16V
C3520	1-126-933-11	ELECT	100µF	20%	16V
C3525	1-128-590-11	ELECT CHIP	100µF	20%	6.3V
C3534	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
	(KV-21FA315/21FA515 ONLY)				

REF. NO.	PART NO.	DESCRIPTION	VALUES		
C3534	1-162-966-11	CERAMIC CHIP	0.0022µF	10%	50V
	(KV-29FA315/29FA515 ONLY)				
C3536	1-115-416-11	CERAMIC CHIP	0.001µF	5%	25V
	(KV-29FA315/29FA515 ONLY)				
C3539	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C3542	1-115-414-11	CERAMIC CHIP	820pF	5%	25V
	(KV-29FA315/29FA515 ONLY)				
C3553	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
C3554	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C3560	1-216-833-11	METAL CHIP	10K	5%	1/10W
C3611	1-126-933-11	ELECT	100µF	20%	16V
C3612	1-126-933-11	ELECT	100µF	20%	16V
C3613	1-126-933-11	ELECT	100µF	20%	16V
C3638	1-104-665-11	ELECT	100µF	20%	25V
C3995	1-124-778-00	ELECT CHIP	22µF	20%	6.3V
C6003	1-127-573-11	CERAMIC CHIP	1µF	10%	16V

CONNECTOR

* CN001	1-560-124-00	PLUG, CONNECTOR	(2.5MM)	4P
* CN301	1-564-512-11	PLUG, CONNECTOR		9P
* CN303	1-564-515-11	PLUG, CONNECTOR		12P

DIODE

D002	8-719-069-55	DIODE	UDZSTE-175.6B
D004	8-719-977-28	DIODE	DTZ10B
D005	8-719-977-28	DIODE	DTZ10B
D006	8-719-069-55	DIODE	UDZSTE-175.6B
D044	8-719-977-28	DIODE	DTZ10B
D045	8-719-977-28	DIODE	DTZ10B
D050	8-719-510-02	DIODE	D1NS4
D051	6-500-567-21	DIODE	10ERB20-TB5
D052	8-719-069-55	DIODE	UDZSTE-175.6B
D110	8-719-404-50	DIODE	MA111-TX
D250	1-803-974-21	VARISTOR, CHIP	(1608)
D304	1-803-974-21	VARISTOR, CHIP	(1608)
D351	6-500-697-01	DIODE	UDZSTE-173.3B
D390	8-719-404-50	DIODE	MA111-TX
D512	8-719-404-50	DIODE	MA111-TX
D513	8-719-404-50	DIODE	MA111-TX
D558	8-719-404-50	DIODE	MA111-TX
D559	8-719-404-50	DIODE	MA111-TX
D3402	1-803-974-21	VARISTOR, CHIP	(1608)
D3501	8-719-404-50	DIODE	MA111-TX

MT

REF. NO.	PART NO.	DESCRIPTION	VALUES
D3502	8-719-069-54	DIODE	UDZSTE-175.1B
D3509	1-803-974-21	VARISTOR, CHIP	(1608)
	FERRITE BEAD		
FB302	1-469-549-21	INDUCTOR	1µH
	FILTER		
FL001	1-234-126-21	FERRITE	0µH
	IC		
IC001	6-805-524-01	IC	M65586MK-050FP-FA
IC002	6-704-004-01	IC	BR24L16F-WE2
IC003	8-759-352-91	IC	PST9143NL
IC004	8-759-533-85	IC	L88M05T-FA-TL
IC565	8-759-700-44	IC	NJM2902M
IC633	8-759-641-26	IC	NJM2391DL1-33(TE1)
IC634	8-759-533-85	IC	L88M05T-FA-TL
IC3701	6-708-386-01	IC	AN15932A
	CHIP CONDUCTOR		
JR44	1-216-864-11	SHORT CHIP	
JR303	1-216-864-11	SHORT CHIP	
JR317	1-216-809-11	METAL CHIP	100 5% 1/10W
JR318	1-216-864-11	SHORT CHIP	
JR546	1-216-864-11	SHORT CHIP	
JR3503	1-216-864-11	SHORT CHIP	
JR3504	1-216-864-11	SHORT CHIP	
JR3505	1-216-864-11	SHORT CHIP	
JR3506	1-216-864-11	SHORT CHIP	
	COIL		
L002	1-234-126-21	FERRITE	0µH
L005	1-234-126-21	FERRITE	0µH
L006	1-414-273-11	INDUCTOR	100µH
L007	1-414-267-21	INDUCTOR	10µH
L011	1-234-126-21	FERRITE	0µH
L611	1-469-561-21	INDUCTOR	100µH
L612	1-469-561-21	INDUCTOR	100µH
L613	1-469-561-21	INDUCTOR	100µH
L3003	1-234-126-21	FERRITE	0µH
L3004	1-234-126-21	FERRITE	0µH
L3609	1-414-267-21	INDUCTOR	10µH

REF. NO.	PART NO.	DESCRIPTION	VALUES
	TRANSISTOR		
Q002	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q004	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q008	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q301	8-729-600-22	TRANSISTOR	2SA1235-F
Q303	8-729-600-22	TRANSISTOR	2SA1235-F
Q305	8-729-600-22	TRANSISTOR	2SA1235-F
Q306	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q307	8-729-600-22	TRANSISTOR	2SA1235-F
Q316	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q390	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q391	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q503	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q504	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q505	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q515	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q519	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q533	8-729-600-22	TRANSISTOR	2SA1235-F
Q860	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q3005	8-729-600-22	TRANSISTOR	2SA1235-F
Q3300	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q3304	8-729-600-22	TRANSISTOR	2SA1235-F
Q3502	8-729-120-28	TRANSISTOR	2SC1623-L5L6
Q6000	8-729-120-28	TRANSISTOR	2SC1623-L5L6
	RESISTOR		
R002	1-216-864-11	SHORT CHIP	
R003	1-216-821-11	METAL CHIP	1K 5% 1/10W
R004	1-216-817-11	METAL CHIP	470 5% 1/10W
R005	1-400-427-21	FERRITE	0µH
R006	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R007	1-400-427-21	FERRITE	0µH
R008	1-216-864-11	SHORT CHIP	
R009	1-216-864-11	SHORT CHIP	
R015	1-216-833-11	METAL CHIP	10K 5% 1/10W
R027	1-218-887-11	METAL CHIP	47K 0.50% 1/10W
R028	1-216-813-11	METAL CHIP	220 5% 1/10W
R030	1-216-813-11	METAL CHIP	220 5% 1/10W
R031	1-216-813-11	METAL CHIP	220 5% 1/10W
R032	1-216-813-11	METAL CHIP	220 5% 1/10W
R034	1-216-864-11	SHORT CHIP	

MT

REF. NO.	PART NO.	DESCRIPTION	VALUES		
R035	1-216-809-11	METAL CHIP	100	5%	1/10W
R037	1-216-833-11	METAL CHIP	10K	5%	1/10W
R038	1-216-813-11	METAL CHIP	220	5%	1/10W
R039	1-216-813-11	METAL CHIP	220	5%	1/10W
R040	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R041	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R042	1-216-813-11	METAL CHIP	220	5%	1/10W
R043	1-216-813-11	METAL CHIP	220	5%	1/10W
R044	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R045	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R047	1-216-813-11	METAL CHIP	220	5%	1/10W
R048	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R049	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R050	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R053	1-216-837-11	METAL CHIP	22K	5%	1/10W
R054	1-216-837-11	METAL CHIP	22K	5%	1/10W
R059	1-216-821-11	METAL CHIP	1K	5%	1/10W
R060	1-216-813-11	METAL CHIP	220	5%	1/10W
R061	1-216-833-11	METAL CHIP	10K	5%	1/10W
R062	1-216-817-11	METAL CHIP	470	5%	1/10W
R063	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R070	1-216-813-11	METAL CHIP	220	5%	1/10W
R076	1-216-809-11	METAL CHIP	100	5%	1/10W
R080	1-216-833-11	METAL CHIP	10K	5%	1/10W
R081	1-216-841-11	METAL CHIP	47K	5%	1/10W
R082	1-216-857-11	METAL CHIP	1M	5%	1/10W
R083	1-216-847-11	METAL CHIP	150K	5%	1/10W
R084	1-216-819-11	METAL CHIP	680	5%	1/10W
R090	1-216-837-11	METAL CHIP	22K	5%	1/10W
R091	1-216-841-11	METAL CHIP	47K	5%	1/10W
R092	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R093	1-216-841-11	METAL CHIP	47K	5%	1/10W
R094	1-216-864-11	SHORT CHIP			
R095	1-216-864-11	SHORT CHIP			
R096	1-216-813-11	METAL CHIP	220	5%	1/10W
R097	1-216-813-11	METAL CHIP	220	5%	1/10W
R100	1-216-849-11	METAL CHIP	220K	5%	1/10W
R101	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R110	1-216-813-11	METAL CHIP	220	5%	1/10W
R112	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R115	1-216-817-11	METAL CHIP	470	5%	1/10W
R116	1-216-853-11	METAL CHIP	470K	5%	1/10W
R131	1-216-813-11	METAL CHIP	220	5%	1/10W
R201	1-216-813-11	METAL CHIP	220	5%	1/10W
R203	1-216-813-11	METAL CHIP	220	5%	1/10W
R213	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R301	1-216-864-11	SHORT CHIP			
R304	1-216-813-11	METAL CHIP	220	5%	1/10W
R305	1-216-813-11	METAL CHIP	220	5%	1/10W
R307	1-216-864-11	SHORT CHIP			
R309	1-216-833-11	METAL CHIP	10K	5%	1/10W
R310	1-216-821-11	METAL CHIP	1K	5%	1/10W
R311	1-216-813-11	METAL CHIP	220	5%	1/10W
R312	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R313	1-216-864-11	SHORT CHIP			
R314	1-216-833-11	METAL CHIP	10K	5%	1/10W
R317	1-216-864-11	SHORT CHIP			
R318	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R319	1-216-813-11	METAL CHIP	220	5%	1/10W
R320	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R322	1-216-864-11	SHORT CHIP			
R324	1-216-821-11	METAL CHIP	1K	5%	1/10W
R326	1-400-427-21	FERRITE	0µH		
R332	1-216-813-11	METAL CHIP	220	5%	1/10W
R337	1-216-801-11	METAL CHIP	22	5%	1/10W
R341	1-218-845-11	METAL CHIP	820	0.50%	1/10W
R342	1-218-847-11	METAL CHIP	1K	0.50%	1/10W
R343	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R344	1-216-821-11	METAL CHIP	1K	5%	1/10W
R345	1-216-864-11	SHORT CHIP			
R351	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R352	1-216-853-11	METAL CHIP	470K	5%	1/10W
R354	1-216-813-11	METAL CHIP	220	5%	1/10W
R355	1-216-813-11	METAL CHIP	220	5%	1/10W
R363	1-216-813-11	METAL CHIP	220	5%	1/10W
R364	1-216-813-11	METAL CHIP	220	5%	1/10W
R365	1-216-864-11	SHORT CHIP			
R366	1-216-813-11	METAL CHIP	220	5%	1/10W
R370	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R371	1-216-849-11	METAL CHIP	220K	5%	1/10W

MT

REF. NO.	PART NO.	DESCRIPTION	VALUES		
R372	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R379	1-216-813-11	METAL CHIP	220	5%	1/10W
R382	1-216-863-11	METAL CHIP	3.3M	5%	1/10W
R383	1-216-813-11	METAL CHIP	220	5%	1/10W
R384	1-216-813-11	METAL CHIP	220	5%	1/10W
R385	1-216-813-11	METAL CHIP	220	5%	1/10W
R511	1-216-864-11	SHORT CHIP			
R513	1-216-845-11	METAL CHIP	100K	5%	1/10W
R515	1-216-845-11	METAL CHIP	100K	5%	1/10W
R526	1-216-837-11	METAL CHIP	22K	5%	1/10W
R540	1-216-833-11	METAL CHIP	10K	5%	1/10W
R547	1-218-869-11	METAL CHIP	8.2K	0.50%	1/10W
	(KV-21FA315/21FA515 ONLY)				
R547	1-218-891-11	METAL CHIP	68K	0.50%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R556	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R557	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R601	1-215-905-11	METAL OXIDE	10	5%	3W
R634	1-215-905-11	METAL OXIDE	10	5%	3W
R701	1-218-724-11	METAL CHIP	22K	0.50%	1/10W
R702	1-218-716-11	METAL CHIP	10K	0.50%	1/10W
R703	1-218-724-11	METAL CHIP	22K	0.50%	1/10W
R704	1-218-714-11	METAL CHIP	8.2K	0.50%	1/10W
R707	1-218-714-11	METAL CHIP	8.2K	0.50%	1/10W
R851	1-216-821-11	METAL CHIP	1K	5%	1/10W
R852	1-218-855-11	METAL CHIP	2.2K	0.50%	1/10W
	(KV-21FA315/21FA515 ONLY)				
R852	1-218-887-11	METAL CHIP	47K	0.50%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R860	1-216-833-11	METAL CHIP	10K	5%	1/10W
R861	1-216-833-11	METAL CHIP	10K	5%	1/10W
R862	1-216-813-11	METAL CHIP	220	5%	1/10W
R900	1-216-851-11	METAL CHIP	330K	5%	1/10W
R3057	1-216-821-11	METAL CHIP	1K	5%	1/10W
R3058	1-216-833-11	METAL CHIP	10K	5%	1/10W
R3085	1-216-864-11	SHORT CHIP			
R3086	1-216-821-11	METAL CHIP	1K	5%	1/10W
R3087	1-216-809-11	METAL CHIP	100	5%	1/10W
R3115	1-216-864-11	SHORT CHIP			
R3303	1-216-863-11	METAL CHIP	3.3M	5%	1/10W
R3305	1-216-864-11	SHORT CHIP			
R3308	1-216-809-11	METAL CHIP	100	5%	1/10W
R3315	1-216-813-11	METAL CHIP	220	5%	1/10W
R3316	1-216-825-11	METAL CHIP	2.2K	5%	1/10W

REF. NO.	PART NO.	DESCRIPTION	VALUES		
R3317	1-216-813-11	METAL CHIP	220	5%	1/10W
R3328	1-216-864-11	SHORT CHIP			
R3390	1-216-864-11	SHORT CHIP			
R3391	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R3392	1-216-818-11	METAL CHIP	560	5%	1/10W
R3393	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R3394	1-216-833-11	METAL CHIP	10K	5%	1/10W
R3395	1-216-864-11	SHORT CHIP			
R3396	1-216-864-11	SHORT CHIP			
R3502	1-216-833-11	METAL CHIP	10K	5%	1/10W
R3504	1-216-864-11	SHORT CHIP			
R3517	1-216-864-11	SHORT CHIP			
	(KV-21FA315/21FA515 ONLY)				
R3517	1-218-873-11	METAL CHIP	12K	0.50%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R3518	1-216-833-11	METAL CHIP	10K	5%	1/10W
R3519	1-216-833-11	METAL CHIP	10K	5%	1/10W
R3524	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R3525	1-216-821-11	METAL CHIP	1K	5%	1/10W
R3527	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R3528	1-216-833-11	METAL CHIP	10K	5%	1/10W
R3529	1-216-833-11	METAL CHIP	10K	5%	1/10W
R3530	1-218-865-11	METAL CHIP	5.6K	0.50%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R3531	1-107-826-11	CERAMIC CHIP	0.1µF	10%	16V
	(KV-21FA315/21FA515 ONLY)				
R3532	1-216-864-11	SHORT CHIP			
R3533	1-218-869-11	METAL CHIP	8.2K	0.50%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R3534	1-218-720-11	METAL CHIP	15K	0.50%	1/10W
R3535	1-218-865-11	METAL CHIP	5.6K	0.50%	1/10W
R3536	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R3537	1-216-845-11	METAL CHIP	100K	5%	1/10W
	(KV-21FA315/21FA515 ONLY)				
R3537	1-216-855-11	METAL CHIP	680K	5%	1/10W
	(KV-29FA315/29FA515 ONLY)				
R3539	1-216-864-11	SHORT CHIP			
R3541	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R3542	1-216-833-11	METAL CHIP	10K	5%	1/10W
R3543	1-216-815-11	METAL CHIP	330	5%	1/10W
R3550	1-216-817-11	METAL CHIP	470	5%	1/10W

MT HC

REF. NO.	PART NO.	DESCRIPTION	VALUES		
R3551	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R3553	1-216-864-11	SHORT CHIP			
R3554	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R3555	1-216-833-11	METAL CHIP	10K	5%	1/10W
R3559	1-216-837-11	METAL CHIP	22K	5%	1/10W
R3580	1-216-837-11	METAL CHIP	22K	5%	1/10W
R3599	1-216-837-11	METAL CHIP	22K	5%	1/10W
R3910	1-216-822-11	METAL CHIP	1.2K	5%	1/10W
R3990	1-216-809-11	METAL CHIP	100	5%	1/10W
R6001	1-216-833-11	METAL CHIP	10K	5%	1/10W
R6002	1-216-833-11	METAL CHIP	10K	5%	1/10W
R6003	1-216-833-11	METAL CHIP	10K	5%	1/10W
R6004	1-216-821-11	METAL CHIP	1K	5%	1/10W
	CRYSTAL				
X001	1-795-006-21	VIBRATOR, CRYSTAL			
X301	1-781-377-31	VIBRATOR, CRYSTAL			

HC

A-1098-888-A HC (VAR) BOARD, MOUNTED (KV-21FA315/21FA515 ONLY)
A-1098-887-A HC (VAR) BOARD, MOUNTED (KV-29FA315/29FA515 ONLY)

	CAPACITOR				
C2001	1-104-665-11	ELECT	100µF	20%	25V
C2201	1-115-416-11	CERAMIC CHIP	0.001µF	5%	25V
C2234	1-126-960-11	ELECT	1µF	20%	50V
C2235	1-126-960-11	ELECT	1µF	20%	50V
C2401	1-126-965-91	ELECT (KV-21FA315/21FA515 ONLY)	22µF	20%	50V
C2402	1-126-965-91	ELECT (KV-21FA315/21FA515 ONLY)	22µF	20%	50V
	CONNECTOR				
* CN2402	1-564-507-11	PLUG, CONNECTOR		4P	
	DIODE				
D2001	8-719-109-89	DIODE	RD5.6ESB2		
D2002	8-719-062-41	DIODE	LNK0210022G1		
D2003	8-719-109-89	DIODE	RD5.6ESB2		
D2004	8-719-109-89	DIODE	RD5.6ESB2		
D2005	8-719-109-89	DIODE	RD5.6ESB2		
D2233	8-719-108-12	DIODE	RD9.1EW		
D2235	8-719-108-12	DIODE	RD9.1EW		
D2236	8-719-108-12	DIODE	RD9.1EW		
	FERRITE BEAD				
FB2001	1-410-397-21	FERRITE (KV-21FA315/21FA515 ONLY)	1.1µH		
FB2002	1-410-397-21	FERRITE (KV-21FA315/21FA515 ONLY)	1.1µH		
FB2003	1-410-397-21	FERRITE (KV-21FA315/21FA515 ONLY)	1.1µH		
FB2004	1-410-397-21	FERRITE (KV-21FA315/21FA515 ONLY)	1.1µH		
	IC				
IC2001	8-742-212-20	HYB IC	SBX3081-71		
	JACK				
J2231	1-794-048-11	JACK, PIN		3P	
J2402	1-750-264-11	JACK (KV-21FA315/21FA515 ONLY)			
	CHIP CONDUCTOR				
JR2403	1-216-864-11	SHORT CHIP			
	TRANSISTOR				
Q2001	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
	RESISTOR				
R2001	1-249-429-11	CARBON	10K	5%	1/4W
R2002	1-249-417-11	CARBON	1K	5%	1/4W
R2003	1-216-817-11	METAL CHIP	470	5%	1/10W
R2004	1-249-417-11	CARBON	1K	5%	1/4W
R2005	1-216-864-11	SHORT CHIP			
R2007	1-247-807-31	CARBON	100	5%	1/4W
R2008	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R2009	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R2010	1-216-820-11	METAL CHIP	820	5%	1/10W
R2011	1-216-819-11	METAL CHIP	680	5%	1/10W
R2201	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R2202	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R2203	1-218-867-11	METAL CHIP	6.8K	0.50%	1/10W
R2235	1-216-813-11	METAL CHIP	220	5%	1/10W
R2236	1-216-845-11	METAL CHIP	100K	5%	1/10W

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

HC CV

REF. NO.	PART NO.	DESCRIPTION	VALUES		
R2237	1-216-813-11	METAL CHIP	220	5%	1/10W
R2238	1-216-845-11	METAL CHIP	100K	5%	1/10W
R2401	1-216-817-11	METAL CHIP	470	5%	1/10W
	(KV-21FA315/21FA515 ONLY)				
R2402	1-216-817-11	METAL CHIP	470	5%	1/10W
	(KV-21FA315/21FA515 ONLY)				
	SWITCH				
S2001	1-692-431-21	SWITCH, TACTILE			
S2002	1-692-431-21	SWITCH, TACTILE			
S2003	1-692-431-21	SWITCH, TACTILE			
S2004	1-692-431-21	SWITCH, TACTILE			
S2005	1-692-431-21	SWITCH, TACTILE			
S2006	1-692-431-21	SWITCH, TACTILE			
S2007	1-762-816-11	SWITCH, TACTILE			
S2008	1-762-816-11	SWITCH, TACTILE			

CV

A-1108-297-A CV (VAR) BOARD, MOUNTED
(KV-21FA315/21FA515 ONLY)
4-382-854-11 SCREW (M3X10), P, SW (+)

CAPACITOR

C701	1-126-947-11	ELECT	47µF	20%	35V
C702	1-136-497-81	FILM	0.1µF	5%	50V
C703	1-126-947-11	ELECT	47µF	20%	35V
C704	1-107-652-11	ELECT	10µF	20%	250V
C705	1-107-652-11	ELECT	10µF	20%	250V
C706	1-137-528-11	MYLAR	0.1µF	10%	250V
C708	1-126-235-11	ELECT	100µF	20%	16V
C709	1-126-964-11	ELECT	10µF	20%	50V
C710	1-126-964-11	ELECT	10µF	20%	50V
C711	1-102-074-00	CERAMIC	0.001µF	10%	50V
C713	1-126-964-11	ELECT	10µF	20%	50V
C714	1-126-947-11	ELECT	47µF	20%	35V
C715	1-162-114-00	CERAMIC	0.0047µF		2KV
C716	1-162-114-00	CERAMIC	0.0047µF		2KV
C719	1-126-947-11	ELECT	47µF	20%	35V
C901	1-107-667-11	ELECT	2.2µF	20%	400V
C902	1-107-364-11	MYLAR	0.01µF	10%	200V
C903	1-126-935-11	ELECT	470µF	20%	16V
C904	1-130-471-00	MYLAR	0.001µF	5%	50V
C905	1-107-364-11	MYLAR	0.01µF	10%	200V
C906	1-130-471-00	MYLAR	0.001µF	5%	50V
C907	1-107-963-11	ELECT	33µF	20%	250V
C908	1-126-935-11	ELECT	470µF	20%	16V
C909	1-104-999-11	MYLAR	0.1µF	5%	200V
C910	1-104-999-11	MYLAR	0.1µF	5%	200V
C911	1-126-933-11	ELECT	100µF	20%	16V
C912	1-126-933-11	ELECT	100µF	20%	16V
C913	1-102-074-00	CERAMIC	0.001µF	10%	50V
C914	1-130-491-00	MYLAR	0.047µF	5%	50V
C930	1-104-655-91	ELECT	470µF	20%	6.3V
C931	1-104-655-91	ELECT	470µF	20%	6.3V

CONNECTOR

*	CN701	1-564-506-11	PLUG, CONNECTOR	3P
	CN703	1-695-915-11	TAB (CONTACT)	
	CN704	1-785-879-11	CONNECTOR, ONE TOUCH	
*	CN706	1-564-510-11	PLUG, CONNECTOR	7P
*	CN901	1-564-512-11	PLUG, CONNECTOR	9P
*	CN902	1-564-506-11	PLUG, CONNECTOR	3P

DIODE

D701	8-719-901-83	DIODE	1SS83
D702	8-719-901-83	DIODE	1SS83
D703	8-719-901-83	DIODE	1SS83
D704	8-719-074-25	DIODE	PG104R
D705	8-719-108-12	DIODE	RD9.1EW
D706	8-719-982-22	DIODE	MTZJ-30D
D901	8-719-924-11	DIODE	MTZJ-T-77-22
D902	8-719-924-11	DIODE	MTZJ-T-77-22
D903	8-719-991-33	DIODE	1SS133T-77
D905	8-719-404-50	DIODE	MA111-TX
D906	8-719-404-50	DIODE	MA111-TX
D907	8-719-404-50	DIODE	MA111-TX
D908	8-719-404-50	DIODE	MA111-TX

IC

IC701	8-759-803-42	IC	LA6500-FA
IC702	8-759-562-43	IC	TDA6108JF/N1B
IC703	8-759-701-59	IC	NJM78M09FA

JACK

⚠	J701	1-451-470-21	SOCKET, CRT

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

CV

REF. NO.	PART NO.	DESCRIPTION	VALUES		
	COIL				
L701	1-410-482-31	INDUCTOR	100µH		
L901	1-410-473-11	INDUCTOR	18µH		
	TRANSISTOR				
Q700	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q701	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q703	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q901	6-551-125-01	TRANSISTOR	2SC59930J1S0		
Q902	6-551-126-01	TRANSISTOR	2SA21400J1S0		
Q903	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q904	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q905	8-729-600-22	TRANSISTOR	2SA1235-F		
Q906	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q907	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q908	8-729-600-22	TRANSISTOR	2SA1235-F		
	RESISTOR				
R700	1-249-433-11	CARBON	22K	5%	1/4W
R701	1-216-833-11	METAL CHIP	10K	5%	1/10W
R702	1-216-811-11	METAL CHIP	150	5%	1/10W
R703	1-216-809-11	METAL CHIP	100	5%	1/10W
R704	1-249-419-11	CARBON	1.5K	5%	1/4W
R705	1-249-429-11	CARBON	10K	5%	1/4W
R706	1-249-381-11	CARBON	1	5%	1/4W
R707	1-249-383-11	CARBON	1.5	5%	1/4W
R708	1-247-807-31	CARBON	100	5%	1/4W
R709	1-247-807-31	CARBON	100	5%	1/4W
R710	1-247-807-31	CARBON	100	5%	1/4W
R711	1-260-328-11	CARBON	1K	5%	1/2W
R712	1-260-328-11	CARBON	1K	5%	1/2W
R713	1-260-328-11	CARBON	1K	5%	1/2W
R714	1-260-087-11	CARBON	100	5%	1/2W
R715	1-260-132-11	CARBON	560K	5%	1/2W
R716	1-260-087-11	CARBON	100	5%	1/2W
R717	1-216-379-21	METAL OXIDE	6.8	5%	2W
R718	1-216-379-21	METAL OXIDE	6.8	5%	2W
R719	1-215-888-00	METAL OXIDE	220	5%	2W
R720	1-216-825-11	METAL CHIP	2.2K	5%	1/10W

REF. NO.	PART NO.	DESCRIPTION	VALUES		
R721	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R722	1-247-807-31	CARBON	100	5%	1/4W
R723	1-247-807-31	CARBON	100	5%	1/4W
R724	1-247-807-31	CARBON	100	5%	1/4W
R725	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R726	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R727	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R731	1-216-864-11	SHORT CHIP			
R732	1-216-833-11	METAL CHIP	10K	5%	1/10W
R733	1-216-833-11	METAL CHIP	10K	5%	1/10W
R734	1-216-809-11	METAL CHIP	100	5%	1/10W
R901	1-249-405-11	CARBON	100	5%	1/4W
R902	1-249-385-11	CARBON	2.2	5%	1/4W
R903	1-249-414-11	CARBON	560	5%	1/4W
R904	1-249-432-11	CARBON	18K	5%	1/4W
R905	1-249-421-11	CARBON	2.2K	5%	1/4W
R906	1-249-432-11	CARBON	18K	5%	1/4W
R907	1-249-385-11	CARBON	2.2	5%	1/4W
R908	1-249-414-11	CARBON	560	5%	1/4W
R909	1-260-316-51	CARBON	100	5%	1/2W
R910	1-215-915-11	METAL OXIDE	470	5%	3W
R911	1-215-405-00	METAL	220	1%	1/4W
R912	1-249-407-11	CARBON	150	5%	1/4W
R913	1-215-391-00	METAL	56	1%	1/4W
R914	1-249-416-11	CARBON	820	5%	1/4W
R915	1-249-425-11	CARBON	4.7K	5%	1/4W
R917	1-249-425-11	CARBON	4.7K	5%	1/4W
R918	1-249-401-11	CARBON	47	5%	1/4W
R919	1-249-401-11	CARBON	47	5%	1/4W
R921	1-249-429-11	CARBON	10K	5%	1/4W
R922	1-249-397-11	CARBON	22	5%	1/4W
R923	1-249-401-11	CARBON	47	5%	1/4W
R930	1-216-864-11	SHORT CHIP			
R931	1-249-421-11	CARBON	2.2K	5%	1/4W
R932	1-218-851-11	METAL CHIP	1.5K	0.50%	1/10W
R933	1-216-864-11	SHORT CHIP			
R935	1-249-405-11	CARBON	100	5%	1/4W
R938	1-216-864-11	SHORT CHIP			
	VARIABLE RESISTOR				
⚠ RV701	1-241-656-11	RES, ADJ, METAL FILM	110M		
RV702	1-238-019-11	RES, ADJ, METAL FILM	47K		

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

C

C

REF. NO.	PART NO.	DESCRIPTION	VALUES		
	A-1111-814-A	**C (VAR) BOARD, MOUNTED (KV-29FA315/29FA515 ONLY)**			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
	CAPACITOR				
C701	1-126-947-11	ELECT	47µF	20%	35V
C702	1-136-497-81	FILM	0.1µF	5%	50V
C703	1-126-947-11	ELECT	47µF	20%	35V
C704	1-107-652-11	ELECT	10µF	20%	250V
C705	1-107-652-11	ELECT	10µF	20%	250V
C706	1-137-528-11	MYLAR	0.1µF	10%	250V
C708	1-126-235-11	ELECT	100µF	20%	16V
C709	1-126-964-11	ELECT	10µF	20%	50V
C710	1-126-964-11	ELECT	10µF	20%	50V
C711	1-102-074-00	CERAMIC	0.001µF	10%	50V
C713	1-126-964-11	ELECT	10µF	20%	50V
C714	1-126-947-11	ELECT	47µF	20%	35V
C715	1-162-114-00	CERAMIC	0.0047µF		2KV
C716	1-162-114-00	CERAMIC	0.0047µF		2KV
C719	1-126-947-11	ELECT	47µF	20%	35V
	CONNECTOR				
* CN701	1-564-506-11	PLUG, CONNECTOR		3P	
CN703	1-695-915-11	TAB (CONTACT)			
CN704	1-785-879-11	CONNECTOR, ONE TOUCH			
* CN706	1-564-510-11	PLUG, CONNECTOR		7P	
	DIODE				
D701	8-719-901-83	DIODE	1SS83		
D702	8-719-901-83	DIODE	1SS83		
D703	8-719-901-83	DIODE	1SS83		
D704	8-719-074-25	DIODE	PG104R		
D705	8-719-108-12	DIODE	RD9.1EW		
	IC				
IC701	8-759-803-42	IC	LA6500-FA		
IC702	8-759-562-43	IC	TDA6108JF/N1B		
IC703	8-759-701-59	IC	NJM78M09FA		
	JACK				
⚠ J701	1-451-470-21	SOCKET, CRT			

REF. NO.	PART NO.	DESCRIPTION	VALUES		
	COIL				
L701	1-410-482-31	INDUCTOR	100µH		
	TRANSISTOR				
Q700	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q701	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q703	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
	RESISTOR				
R700	1-249-433-11	CARBON	22K	5%	1/4W
R701	1-216-833-11	METAL CHIP	10K	5%	1/10W
R702	1-216-811-11	METAL CHIP	150	5%	1/10W
R703	1-216-809-11	METAL CHIP	100	5%	1/10W
R704	1-249-419-11	CARBON	1.5K	5%	1/4W
R705	1-249-429-11	CARBON	10K	5%	1/4W
R706	1-249-381-11	CARBON	1	5%	1/4W
R707	1-249-383-11	CARBON	1.5	5%	1/4W
R708	1-247-807-31	CARBON	100	5%	1/4W
R709	1-247-807-31	CARBON	100	5%	1/4W
R710	1-247-807-31	CARBON	100	5%	1/4W
R711	1-260-328-11	CARBON	1K	5%	1/2W
R712	1-260-328-11	CARBON	1K	5%	1/2W
R713	1-260-328-11	CARBON	1K	5%	1/2W
R714	1-260-087-11	CARBON	100	5%	1/2W
R715	1-260-132-11	CARBON	560K	5%	1/2W
R716	1-260-087-11	CARBON	100	5%	1/2W
R717	1-216-375-00	METAL OXIDE	3.3	5%	2W
R718	1-216-373-11	METAL OXIDE	2.2	5%	2W
R719	1-215-888-00	METAL OXIDE	220	5%	2W
R720	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R721	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R722	1-247-807-31	CARBON	100	5%	1/4W
R723	1-247-807-31	CARBON	100	5%	1/4W
R724	1-247-807-31	CARBON	100	5%	1/4W
R725	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R726	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R727	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R731	1-216-864-11	SHORT CHIP			
R732	1-216-833-11	METAL CHIP	10K	5%	1/10W
R733	1-216-833-11	METAL CHIP	10K	5%	1/10W
R734	1-216-809-11	METAL CHIP	100	5%	1/10W

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

C V

REF. NO.	PART NO.	DESCRIPTION	VALUES		
		VARIABLE RESISTOR			
⚠ RV701	1-241-656-11	RES, ADJ, METAL FILM	110M		
RV702	1-238-019-11	RES, ADJ, METAL FILM	47K		

V

	A-1111-815-A	**V (VAR) BOARD, MOUNTED (KV-29FA315/29FA515 ONLY)**			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
		CAPACITOR			
C802	1-126-964-11	ELECT	10µF	20%	50V
C803	1-137-378-11	MYLAR	0.22µF	5%	50V
C804	1-137-378-11	MYLAR	0.22µF	5%	50V
C805	1-131-985-21	FILM	0.033µF	5%	250V
C808	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C809	1-128-934-91	CERAMIC CHIP	0.33µF	20%	10V
C810	1-130-495-00	MYLAR	0.1µF	5%	50V
C811	1-129-725-00	FILM	0.082µF	5%	400V
C812	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C813	1-126-933-11	ELECT	100µF	20%	16V
C821	1-162-970-11	CERAMIC CHIP	0.01µF	10%	25V
C823	1-130-967-00	FILM	0.0027µF	5%	50V
C824	1-165-176-11	CERAMIC CHIP	0.047µF	10%	16V
C826	1-162-927-11	CERAMIC CHIP	100pF	5%	50V
C862	1-126-964-11	ELECT	10µF	20%	50V
C901	1-107-667-11	ELECT	2.2µF	20%	400V
C902	1-107-364-11	MYLAR	0.01µF	10%	200V
C903	1-126-935-11	ELECT	470µF	20%	16V
C904	1-130-471-00	MYLAR	0.001µF	5%	50V
C905	1-107-364-11	MYLAR	0.01µF	10%	200V
C906	1-130-471-00	MYLAR	0.001µF	5%	50V
C907	1-107-963-11	ELECT	33µF	20%	250V
C908	1-126-935-11	ELECT	470µF	20%	16V
C909	1-104-999-11	MYLAR	0.1µF	5%	200V
C910	1-104-999-11	MYLAR	0.1µF	5%	200V
C911	1-126-933-11	ELECT	100µF	20%	16V
C912	1-126-933-11	ELECT	100µF	20%	16V
C913	1-102-074-00	CERAMIC	0.001µF	10%	50V
C914	1-130-491-00	MYLAR	0.047µF	5%	50V
C930	1-104-655-91	ELECT	470µF	20%	6.3V
C931	1-104-655-91	ELECT	470µF	20%	6.3V
C1815	1-129-718-00	FILM	0.022µF	5%	630V
C1816	1-102-244-00	CERAMIC	220pF	10%	500V
C1817	1-129-709-91	FILM	0.0039µF	5%	630V
C1818	1-102-002-00	CERAMIC	680pF	10%	500V
C1820	1-109-954-11	ELECT	0.47µF	20%	160V
C2801	1-128-578-11	ELECT	1µF	20%	100V
		CONNECTOR			
* CN901	1-564-512-11	PLUG, CONNECTOR			9P
* CN902	1-770-723-11	CONNECTOR, BOARD TO BOARD			8P
CN1802	1-785-879-11	CONNECTOR, ONE TOUCH			
		DIODE			
D804	8-719-074-25	DIODE	PG104R		
D805	8-719-991-33	DIODE	1SS133T-77		
D806	8-719-991-33	DIODE	1SS133T-77		
D807	8-719-210-21	DIODE	11EQS04		
D808	8-719-991-33	DIODE	1SS133T-77		
D813	8-719-991-33	DIODE	1SS133T-77		
D901	8-719-924-11	DIODE	MTZJ-T-77-22		
D902	8-719-924-11	DIODE	MTZJ-T-77-22		
D903	8-719-991-33	DIODE	1SS133T-77		
D905	8-719-404-50	DIODE	MA111-TX		
D906	8-719-404-50	DIODE	MA111-TX		
D907	8-719-404-50	DIODE	MA111-TX		
D908	8-719-404-50	DIODE	MA111-TX		
D1809	8-719-110-41	DIODE	RD15ESB2		
D1810	8-719-970-87	DIODE	ERA38-06		
D1811	8-719-970-87	DIODE	ERA38-06		
D1812	8-719-081-93	DIODE	1N4937/23		
D2801	8-719-109-89	DIODE	RD5.6ESB2		
D2802	8-719-991-33	DIODE	1SS133T-77		
		IC			
IC801	6-701-598-01	IC	UPC5023CS-184		
		CHIP CONDUCTOR			
JR802	1-216-864-11	SHORT CHIP			
JR803	1-216-864-11	SHORT CHIP			

V

REF. NO.	PART NO.	DESCRIPTION	VALUES		
	COIL				
L801	1-406-989-21	INDUCTOR	10MH		
L802	1-419-633-11	INDUCTOR	10MH		
L803	1-412-529-11	INDUCTOR	22µH		
L901	1-410-473-11	INDUCTOR	18µH		
L1805	1-406-677-11	INDUCTOR	10MH		
	TRANSISTOR				
Q805	6-550-106-01	TRANSISTOR	KTB764		
Q807	8-729-931-45	TRANSISTOR	IRF614		
Q808	6-550-106-01	TRANSISTOR	KTB764		
Q812	8-729-026-39	TRANSISTOR	2SA933AS-QT		
Q901	6-551-125-01	TRANSISTOR	2SC59930J1S0		
Q902	6-551-126-01	TRANSISTOR	2SA21400J1S0		
Q903	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q904	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q905	8-729-600-22	TRANSISTOR	2SA1235-F		
Q906	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q907	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q908	8-729-600-22	TRANSISTOR	2SA1235-F		
Q1810	8-729-043-95	TRANSISTOR	2SC3840(3)		
Q2801	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q2802	8-729-600-22	TRANSISTOR	2SA1235-F		
Q2803	8-729-600-22	TRANSISTOR	2SA1235-F		
Q2804	8-729-600-22	TRANSISTOR	2SA1235-F		
	RESISTOR				
R809	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R811	1-249-393-11	CARBON	10	5%	1/4W
R815	1-215-862-11	METAL OXIDE	68	5%	1W
R817	1-218-879-11	METAL CHIP	22K	0.50%	1/10W
R818	1-216-809-11	METAL CHIP	100	5%	1/10W
R819	1-216-841-11	METAL CHIP	47K	5%	1/10W
R820	1-216-839-11	METAL CHIP	33K	5%	1/10W
R821	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R822	1-216-841-11	METAL CHIP	47K	5%	1/10W
R824	1-218-895-11	METAL CHIP	100K	0.50%	1/10W
R825	1-216-845-11	METAL CHIP	100K	5%	1/10W
R826	1-249-421-11	CARBON	2.2K	5%	1/4W
R827	1-218-863-11	METAL CHIP	4.7K	0.50%	1/10W
R828	1-218-883-11	METAL CHIP	33K	0.50%	1/10W
R829	1-216-853-11	METAL CHIP	470K	5%	1/10W
R833	1-218-865-11	METAL CHIP	5.6K	0.50%	1/10W
R834	1-218-859-11	METAL CHIP	3.3K	0.50%	1/10W
R837	1-218-869-11	METAL CHIP	8.2K	0.50%	1/10W
R840	1-218-855-11	METAL CHIP	2.2K	0.50%	1/10W
R841	1-218-863-11	METAL CHIP	4.7K	0.50%	1/10W
R842	1-218-855-11	METAL CHIP	2.2K	0.50%	1/10W
R855	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
R856	1-218-861-11	METAL CHIP	3.9K	0.50%	1/10W
R857	1-218-877-11	METAL CHIP	18K	0.50%	1/10W
R860	1-218-871-11	METAL CHIP	10K	0.50%	1/10W
R864	1-218-823-11	METAL CHIP	100	0.50%	1/10W
R866	1-249-438-11	CARBON	56K	5%	1/4W
R870	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R876	1-216-821-11	METAL CHIP	1K	5%	1/10W
R890	1-218-891-11	METAL CHIP	68K	0.50%	1/10W
R893	1-216-839-11	METAL CHIP	33K	5%	1/10W
R901	1-249-405-11	CARBON	100	5%	1/4W
R902	1-249-385-11	CARBON	2.2	5%	1/4W
R903	1-249-414-11	CARBON	560	5%	1/4W
R904	1-249-432-11	CARBON	18K	5%	1/4W
R905	1-249-421-11	CARBON	2.2K	5%	1/4W
R906	1-249-432-11	CARBON	18K	5%	1/4W
R907	1-249-385-11	CARBON	2.2	5%	1/4W
R908	1-249-414-11	CARBON	560	5%	1/4W
R909	1-260-316-51	CARBON	100	5%	1/2W
R910	1-215-915-11	METAL OXIDE	470	5%	3W
R911	1-215-405-00	METAL	220	1%	1/4W
R912	1-249-407-11	CARBON	150	5%	1/4W
R913	1-215-391-00	METAL	56	1%	1/4W
R914	1-249-416-11	CARBON	820	5%	1/4W
R915	1-249-425-11	CARBON	4.7K	5%	1/4W
R917	1-249-425-11	CARBON	4.7K	5%	1/4W
R918	1-249-401-11	CARBON	47	5%	1/4W
R919	1-249-401-11	CARBON	47	5%	1/4W
R921	1-249-429-11	CARBON	10K	5%	1/4W
R922	1-249-397-11	CARBON	22	5%	1/4W
R923	1-249-401-11	CARBON	47	5%	1/4W
R930	1-216-864-11	SHORT CHIP			
R931	1-249-421-11	CARBON	2.2K	5%	1/4W
R932	1-218-851-11	METAL CHIP	1.5K	0.50%	1/10W

NOTE: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

V

REF. NO.	PART NO.	DESCRIPTION	VALUES		
R933	1-216-864-11	SHORT CHIP			
R935	1-249-405-11	CARBON	100	5%	1/4W
R938	1-216-864-11	SHORT CHIP			
R1845	1-249-441-11	CARBON	100K	5%	1/4W
R1846	1-249-441-11	CARBON	100K	5%	1/4W
R1847	1-249-441-11	CARBON	100K	5%	1/4W
R1848	1-215-894-11	METAL OXIDE	2.2K	5%	2W
R1849	1-243-617-71	METAL OXIDE	8.2K	5%	3W
R1850	1-243-617-71	METAL OXIDE	8.2K	5%	3W
R1851	1-215-922-11	METAL OXIDE	6.8K	5%	3W
R1852	1-215-922-11	METAL OXIDE	6.8K	5%	3W
R2800	1-216-837-11	METAL CHIP	22K	5%	1/10W
R2801	1-216-841-11	METAL CHIP	47K	5%	1/10W
R2802	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2803	1-216-837-11	METAL CHIP	22K	5%	1/10W
R2804	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2805	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R2807	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R2808	1-216-833-11	METAL CHIP	10K	5%	1/10W

TRANSFORMER

⚠ T504	1-424-584-31	TRANSFORMER, FERRITE (DFT)	

PACKING AND ACCESSORIES

	1-501-730-41	ANTENNA, TELESCOPIC (KV-21FA315/21FA515 ONLY)
*	4-041-255-01	BAG, PROTECTION (KV-21FA315/21FA515 ONLY)
*	4-041-259-14	BAG, PROTECTION (KV-29FA315/29FA515 ONLY)
*	2-631-263-01	BAG, PROTECTION (21SP) (KV-21FA515 ONLY)
*	2-584-135-01	BAG, PROTECTION (29BS) (KV-21FA515/29FA515 ONLY)
*	2-582-913-01	BAG, PROTECTION (29SP) (KV-29FA515 ONLY)
*	2-584-133-01	CARTON, INDIVIDUAL (KV-21FA315 ONLY)
*	2-582-912-01	CARTON, INDIVIDUAL (KV-29FA515 ONLY)
*	2-584-132-01	CARTON, INDIVIDUAL (KV-21FA515 ONLY)
*	2-584-134-01	CARTON, INDIVIDUAL (KV-29FA315 ONLY)
	1-830-586-11	CORD WITH CONNECTOR (KV-21FA515/29FA515 ONLY)
*	2-584-131-01	CUSHION, LOWER (KV-21FA315/21FA515 ONLY)
*	2-582-911-01	CUSHION, LOWER (KV-29FA315/29FA515 ONLY)
*	2-584-130-01	CUSHION, UPPER (KV-21FA315/21FA515 ONLY)
*	2-582-910-01	CUSHION, UPPER (KV-29FA315/29FA515 ONLY)
	2-590-494-41	MANUAL, INSTRUCTION (KV-21FA315/29FA315 ONLY)
	2-588-987-41	MANUAL, INSTRUCTION (KV-21FA515/29FA515 ONLY)
	1-417-182-11	MATCHING TRANSFORMER, ANTENNA (KV-21FA315/21FA515 ONLY)

REMOTE COMMANDER

1-478-707-12	REMOTE COMMANDER RM-Y195
4-978-977-11	BATTERY COVER (FOR RM-Y195)

Sony Corporation
Sony Technology Center
Technical Services
Service Promotion Department

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SERVICE MANUAL

BA-6 CHASSIS

In an effort to reduce the size of this pdf file the tiled schematics are not attached to this Service Manual. To receive a complete set of the tiled schematics for this manual please submit a request to:

Service_Promotion@am.sony.com.